Healthy Pathways Forward

A STRATEGIC INTEGRATED APPROACH TO VIRAL HEPATITIS IN BC

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Executive Summary

Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis in British Columbia serves as a renewed provincial blueprint to complement, guide and support community and health authority efforts to address viral hepatitis in British Columbia. Notwithstanding remarkable progress in reducing new infection rates between 1999 and 2005, viral hepatitis remains a serious health issue affecting more than 100,000 British Columbians (BC Centre for Disease Control, unpublished data, 2006), and one often linked with vulnerability to other blood borne diseases. This framework is intended to focus provincial efforts to achieve the best prevention, care and treatment outcomes possible.

Initially developed by an expert steering committee, the framework's strategic direction was shaped by extensive input from health authority staff, community partners and members of communities vulnerable to viral hepatitis. Workshops to support framework development were held in nine different communities. Driven by the best evidence from around the world and valuable lessons learned here at home, this framework renews British Columbia's 1999 Viral Hepatitis Strategy—Canada's first— by drawing on successes from demonstration projects operated by British Columbia's health authorities with the assistance of the British Columbia Centre for Disease Control (BCCDC). This framework also draws on the wisdom garnered through addressing viral hepatitis at the community level, and on lessons learned in allied efforts to address chronic disease, mental health and addictions.

Taken together, this evidence and these lessons help focus efforts within the viral hepatitis sector and beyond. Individuals, communities and the health system must act together to prevent new infections, improve treatment, and ensure all British Columbians benefit from coordinated, collaborative and integrated responses to not only viral hepatitis, but also other blood borne diseases and co-infections such as HIV/AIDS. Moving away from traditional, disease-specific approaches and supporting health system reform based on principles of population health, improved chronic disease management and service integration will achieve better outcomes for British Columbians and better use of health care resources.

Discussions with Aboriginal groups confirmed the need for a distinct and complementary implementation strategy that will address the unique circumstances faced by Aboriginal British Columbians.

This framework's vision—healthy pathways towards a hepatitis-free BC—is supported by a mission that aims to improve health and wellness by reducing vulnerability. Principles and values serve as tools for decision-makers. A roadmap for reducing the incidence and impact of viral hepatitis in British Columbia is contained in four strategic health system goals.

Since 1999, targeted vaccination initiatives have been highly effective in managing hepatitis A across the province, and similar approaches, combined with post-exposure prophylaxis, are preventing new hepatitis B infections. However, approximately 60,000 British Columbians are living with chronic hepatitis B infection, and estimates suggest another 60,000 British Columbians are affected by hepatitis C—a blood-borne virus for which there is no vaccine (BCCDC, unpublished data, 2006). Viral hepatitis has a profound impact on individuals, families and communities across British Columbia. Addressing viral hepatitis is not only the right thing to do from a health perspective; it is an important constituent of a healthy economic and social fabric for the province. A renewed strategic direction and the application of new evidence furthers British Columbia's comprehensive approach to viral hepatitis, and provides a flexible framework for responding to challenges in the future.

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Introduction

Explicit health policy achieves several things: it outlines a vision for the future, which in turn helps establish short- and medium-term goals. It outlines priorities, and the roles different groups play in accomplishing the goals. And it builds consensus and informs people, and in doing so fulfils an important role of governance (World Health Organization, 2000, p. 122). While the task of formulating health policy clearly falls to the health ministry, good policy is best developed in partnership with those affected and those responsible for its implementation.

Healthy Pathways Forward: A Strategic Integrated Approach to Viral Hepatitis in British Columbia supports decision-makers, planners and health care providers in responding more effectively to viral hepatitis and its impacts. Developed by a steering committee[1] including epidemiologists, physicians, nurses, advocates, policy makers and service providers, the framework provides a policy platform for implementation across the service system, and is based on the assumption that the work will need to be done largely within the context of existing resources. The Ministry of Health, the Provincial Health Services Authority through the British Columbia Centre for Disease Control (BCCDC), regional health authorities and the community are all key implementation partners.

This framework is built on the experience gained through British Columbia's 1999 Viral Hepatitis Strategy, best practices from other jurisdictions and promising practices in British Columbia. The framework takes a systems approach, looking at the continuum of services from health promotion through palliation, and examines the role of community in mobilizing an effective response to reducing the incidence and impact of hepatitis. The framework also recognizes that persons living with or vulnerable to hepatitis may well be vulnerable to other diseases and health issues.

While the intent of the document is to address all viral hepatitis agents, hepatitis A virus (HAV) causes an acute self-limiting infection, and is currently effectively managed through targeted HAV vaccination and some limited post-exposure prophylaxis. In contrast, both chronic hepatitis B (HBV) and hepatitis C (HCV) infections pose major long-term burdens to society because 10 to 20 per cent of those infected will either develop cirrhosis, end-stage liver disease, liver cancer or require liver transplantation in the coming decades.

Because HCV disproportionately affects vulnerable populations, requires complex prevention strategies, and is challenging to treat in many cases, it provides an opportunity to analyze and improve the way our health system delivers comprehensive health promotion, prevention, care and treatment to population groups considered vulnerable or 'hard-to-reach'. *Healthy Pathways Forward* presents a strategic approach that can act as a 'roadmap' for a coordinated and integrated response that addresses multiple vulnerabilities—thereby improving overall health outcomes related to viral hepatitis and beyond.

More than 130 individuals, community service organizations and health authority staff members helped shape this framework through their participation in consultations held in nine communities across the province in early 2006.

Input was also sought from the Aboriginal community, family physicians, the BC Corrections Branch, Citizenship and Immigration Canada, Health Canada, the Vancouver Area Network of Drug Users and youth living with hepatitis and/or HIV at the YouthCO AIDS Society. A range of themes were identified through the consultation process and these themes are outlined in Appendix E. This extensive consultation process helped confirm the strategic direction outlined in this framework and provided an in-depth understanding of the issues.

Framework at a Glance

This framework's vision—healthy pathways towards a hepatitis-free BC—is supported by a mission that aims to improve health and wellness by reducing vulnerability. A roadmap for reducing the incidence and impact of viral hepatitis in British Columbia is contained in four strategic health system goals, and a series of principles and values that act as signposts for decision-making at all levels. In turn, each goal is supported by detailed objectives and strategies that together speak to all health system partners.

Figure 1: Framework at a glance

HEALTHY PATHWAYS TOWARDS A HEPATITIS-FREE BC			
FOUR HEALTH SYSTEM GOALS			
Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease	Enhance reach and engage vulnerable populations in the health promotion, prevention, care, treatment and support service continuum	Strengthen the system's capacity to respond	Create seamless service delivery
GUIDING PRINCIPLES AND VALUES			
Integrity Ethics Fairness	Harm Reduction Connection and Integration Accountability	Continuous Learning Participation and Collaboration Respect and Compassion	

Background and Context

Through intensive identification of new infections, targeted vaccine programs and post-exposure prophylaxis, the management of hepatitis A (HAV) within BC has been highly effective. Likewise, most new hepatitis B (HBV) infections are being successfully prevented through universal and targeted HBV vaccine programs. Nevertheless, HBV infection is estimated to affect 60,000 British Columbians (British Columbia Centre for Disease Control [BCCDC], BC Hepatitis Services)—the burden of chronic HBV infection resides largely in immigrant populations that acquired HBV in their country of origin. While optimal therapies have yet to be defined, treatment of chronic HBV is rapidly evolving.

Healthy Pathways Forward: A Strategic Framework for Viral Hepatitis in British Columbia places additional emphasis on hepatitis C virus (HCV). There are several reasons for this. Like HBV, HCV is estimated to affect 60,000 British Columbians comprising approximately 1.5 per cent of the province's population (Health Canada, 2005); however, it is not vaccine preventable. Prior to 1990 contaminated blood products accounted for 10-15 per cent of new HCV infections, but this source of infection has now been virtually eliminated.

By 2005, the majority of new HCV infections in British Columbia were attributable to injection drug use (Zou, Forrester, & Giulivi, 2003). Consequently, an increasing proportion of the population infected with HCV can be difficult to reach and also affected by addictions, mental illness or HIV. And, while HCV can now largely be effectively treated, treatments are costly, sometimes associated with challenging side effects, and access is limited. Both chronic HBV and HCV infections pose major long-term burdens to society because many of those chronically infected will develop cirrhosis, liver cancer and/or end-stage liver disease, and may require liver transplantation in the coming decades (Gagnon, Levy, Iloeje, & Briggs, 2004; El Saadany, Coyle, Giulivi, Afzal, 2005).

Services for the prevention, care and treatment of viral hepatitis are delivered through health authorities as a component of the integrated hepatitis strategy. The investment in these services is sizable—BC Hepatitis Services estimates that the province spends approximately $200 million each year managing viral hepatitis and preventing new infections. This investment has demonstrated positive outcomes, including substantial drops in population rates of new HAV and HBV infections.

Approximately $5.7 million is provided annually to the BCCDC to fund BC Hepatitis Services, vaccine programs, diagnostic testing, provincial coordination and professional education, as well as viral hepatitis demonstration sites developed in partnership with each regional health authority. Surveillance and monitoring are provided through public health programs and the BCCDC. Costs associated with antiviral drug treatments for hepatitis are almost entirely covered by Pharmacare. End-stage liver disease costs, borne by health authorities and specialized provincial service providers like the BC Transplant Society, can range from $500,000 to $1 million per patient (Guidelines and Protocols Advisory Committee, 2004).

The directions identified within British Columbia's 1999 Viral Hepatitis Strategy prompted BC Hepatitis Services and partners at regional health authorities to pilot demonstration sites[2] to model, test and refine best practices across diverse settings, producing information and experience that has helped shape this renewed framework.

This framework is also informed by related provincial policy documents such as *Priorities for Action in Managing the Epidemics: HIV/AIDS in BC, 2003-2007* (Ministry of Health Planning [MOHP] & Ministry of Health Services [MOHS], 2003), *Every Door is the Right Door: A British Columbia Planning Framework to Address Problematic Substance Use and Addiction* (MOHS, 2004), *British Columbia's Expanded Chronic Care Model* (Ministry of Health [MOH], Chronic Disease Management, 2005), and *Following the Evidence: Preventing Harms from Substance Use in BC* (MOH, 2006). Together with the guidance received from the steering committee and consultation participants, the lessons learned over the past five years—and the challenges they pose—demand a renewed framework for coordinated action. These lessons and challenges are summarized below in Figure 2.

Figure 2: Viral hepatitis in BC, 2006: lessons learned and challenges posed

VIRAL HEPATITIS IN BC 2006 — LESSONS LEARNED
• *Interdisciplinary and inter-disease integration and coordination lead to better decision-making and more effective use of resources.* • *Targeted vaccine delivery programs across the province have significantly reduced the incidence of hepatitis A and acute hepatitis B infections.* • *Transmission prevention can be enhanced through expanded immunization programs and, where no vaccine exists, through health promotion and harm reduction initiatives.* • *Employing an integrated disease management approach to those already infected will assist in reducing the burden of disease.* • *Self-care management strategies and practices for coping with chronic illness can make a difference to individuals affected by hepatitis B and C over the long term.* • *Knowledge exchange and transfer strategies have resulted in service improvements, and should be expanded to ensure practice remains current and evidence-based.* • *Regional/local access to assessment and treatment services is developing and should be expanded and evaluated.*
VIRAL HEPATITIS IN BC 2006 — CHALLENGES POSED
• *More emphasis must be placed on engaging populations that experience multiple vulnerabilities and ongoing disease transmission.* • *Effective prevention and harm reduction strategies for hepatitis C must be identified, tested and widely disseminated.* • *Information management systems must be fully developed for program efficacy and efficiency, and surveillance systems should be enhanced.* • *Clinical and laboratory services must emphasize knowledge transfer, improved diagnostic and monitoring protocols and reduced inter-laboratory duplication.* • *Appropriate access to drugs and treatment needs to be improved—challenges include an evolving evidence base related to effective treatment, high-threshold treatment guidelines, treatment costs and providing support during and after treatment.*

Applying the lessons learned through experience with viral hepatitis and other diseases and conditions is especially important for informing the response to HCV. Because HCV is disproportionately prevalent in vulnerable populations, complex prevention and harm reduction initiatives are needed to reduce ongoing transmission.

New approaches for making treatment accessible to more British Columbians are also needed. Developing a strategic response that works for HCV by integrating service and support streams that effectively engage the most vulnerable populations, can result in a "roadmap" that can be used both for prevention and care of viral hepatitis *and* in responding more effectively to other communicable and non-communicable illnesses.

Appendix A contains a comprehensive picture of viral hepatitis in British Columbia to 2006 prepared by the BCCDC. Ongoing surveillance activity and updates on the state of viral hepatitis in British Columbia can be obtained online at the BCCDC website at www.bccdc.org.

Conceptual Framework

Like most of Canada, BC's population is aging—the average age of British Columbians increases each year. The health care needs that emerge from this trend are largely driven by a variety of chronic diseases and conditions, requiring complex, lengthy and expensive clinical care strategies. In this context, the number of British Columbians living with multiple diseases and conditions will continue to increase, and it will be neither possible nor desirable to treat only one disease—the whole person will need to be treated for a variety of pressing, and at times serious, health concerns.

At the same time, there are groups within our society that are not well-engaged in health services in ways that might prevent serious, potentially life-threatening conditions. Some members of these population groups are falling through gaps in our public and primary health systems, and are likely to present episodically in an acute care setting for treatment of diseases in the later stages, when medical management is often difficult and very costly. This leads to a relatively small percentage of the province's population consuming a disproportionately large percentage of the province's health system resources—simply because they are not being effectively engaged in health services at an early stage within a continuous, integrated framework that meets their comprehensive health needs.

By moving away from the traditional, specialized, disease-specific health delivery system and introducing reform based on the principles of population health, communicable and non-communicable disease prevention, expanded chronic care management and integration of systems and services, the health system can support better health outcomes for individuals and communities, while using limited health care resources more effectively.

Meeting this challenge means patients, families, communities and health care providers must work together to support individuals living with chronic illnesses to more effectively manage their own care, make the most efficient use of available resources and build capacity at the community level to respond to new and emerging challenges. An effective response also requires policy makers to adopt approaches that encourage collaboration and integration, and challenge structural barriers created by traditional models of management and funding of services. British Columbia's *Expanded Chronic Care Model* [3] was developed to begin addressing some of these issues.

The provincial government has signaled its intention to lead the way in North America in healthy living and physical fitness by 2010. Preventing disease and managing chronic conditions such as viral hepatitis are important elements in achieving this goal. Making a significant reduction in the incidence and impact of viral hepatitis in British Columbia requires a concerted effort on multiple fronts—moving away from a portfolio of somewhat disconnected services toward a comprehensive package of support encompassing a continuum of services from health promotion to palliation. Both the experience gleaned through British Columbia's Expanded Chronic Care Model and BC Hepatitis Services demonstration sites suggest that a more effective approach to hepatitis

care is evolving from a specialist-dependent, acute care delivery model to an interdisciplinary, shared care[4] model of integrated primary health care that includes chronic illness prevention and self-care management, and places increased importance on the role of nurses and affiliated support staff within this process. This approach demonstrates the strengths of creating networks and strategic alliances that link the public health system with the broader health system—particularly when combined with a community-driven shared care approach (health care and service providers, other partners, clients, families). At its most effective, this model engages the client and community as part of the team, and builds on the strengths, assets and resiliency of all involved—health care providers, clients and community.

Underpinning this evolution to a more effective approach to hepatitis is the concept of integration—integrated approaches can promote greater efficiency, and improve communication and coordination among clients, providers and government funding agencies. Integration can also improve sustainability of health services, increase cost-effectiveness, improve health status, increase user satisfaction, and improve equity of service delivery (Alberta Health and Wellness, 2000; Hoffman et al., 2004; Sciacca & Thompson, 1996). A more fulsome examination of health system integration is contained in Appendix C.

Community consultations emphasized the importance of more broadly defining what is meant by "vulnerable" populations. Frequently the analysis gives a narrow view of those who are vulnerable as people who are engaged in risk behaviours such as injection drug use. However, that definition does not paint the full picture. Vulnerable populations in the context of viral hepatitis can range from those who have never engaged in risk behaviour (for example, people infected through the blood supply), to those whose risk behaviour occurred long in the past and was not sustained, to those who do not perceive that their behaviour could put them at risk (for example, athletes who inject steroids to enhance performance), to the traditional target population of people involved in commonly understood high-risk behaviours. Vulnerability can also be tracked along a life cycle continuum—from birth, youth and early adulthood through to old age.

If we are to reduce or eliminate the transmission of viral hepatitis, it is essential that we reach all vulnerable populations. Every person at-risk for, or living with, viral hepatitis must feel safe seeking diagnosis, treatment, care and support. Communities, not just service providers, must demonstrate acceptance and encourage those vulnerable or infected to seek the care they need. Strategies must simultaneously focus on the most at-risk vulnerable populations, while engaging the wider population across the life cycle. Pathways must be both focused and inclusive.

Building a healthy pathway to a hepatitis-free BC demands an approach rooted in continuous learning and a commitment to adapting existing approaches and practice when warranted. Information that is provided through enhanced surveillance, evaluation and field-tested, peer-reviewed best practices, must be used to continuously develop and adapt responses. Lessons learned will come from within the existing hepatitis sector (e.g., immunization, and findings from the provincial hepatitis demonstration sites) as well as from other areas (e.g., chronic disease, HIV and addictions) and from other jurisdictions.

While BC's response is similar to that of other jurisdictions—for instance, prevention, outreach and engagement, and increased surveillance—there are three significant differences in this renewed provincial approach: the emphasis on system change, integration through inter-disciplinary partnerships and community involvement.

A model for such an approach is illustrated in Figure 3 below. A population health basis will provide the core, taking into consideration the social determinants of health and how they inform and drive the vulnerability of populations. This will mean prioritizing efforts to reach the greatest number of people most likely to be at risk, as well as broadening reach to develop more extensive partnerships across government departments, across the health care system and with the community at the individual, organization and population level.

Figure 3: Foundation for hepatitis response

Viral Hepatitis and Aboriginal British Columbians

There are unique circumstances governing the lives of British Columbia's Aboriginal populations (Provincial Health Officer, 2002). Aboriginal people may live on a reserve or in non-reserve communities, and in some instances may move between reserve and non-reserve communities. The way in which health care services are delivered depends on where an Aboriginal person lives: if on-reserve, most health care service delivery is the responsibility of the First Nations and Inuit Health Branch of Health Canada; if off-reserve, Aboriginal people access their health services largely through the province's health authorities. Aboriginal communities represent the fastest growing part of BC's population, with the highest birth rate; birth rates are especially high in northern BC (MOHP, BC Vital Statistics Agency, 2004).

In general BC's aboriginal population faces higher levels of poverty, lower levels of educational attainment, higher unemployment and higher rates of chronic disease, mortality and morbidity, although many of these indicators are showing improvement. Improvement, where it is occurring, can be attributed to the resiliency and capacities of Aboriginal people, cultural and political resurgence in Aboriginal communities and the success of targeted programs and services (Provincial Health Officer, 2002).

Consultation with Aboriginal groups confirmed the need for a distinct and complementary implementation strategy for the framework, developed in partnership with Aboriginal people—a strategy that advances the goals and objectives of *Healthy Pathways Forward* within the context of the unique circumstances in which Aboriginal people live, the ways in which health services are delivered and the diversity of Aboriginal populations across the province.

Roles and Responsibilities

Responsibility for addressing viral hepatitis is shared between the Ministry of Health, the BCCDC, the province's health authorities and all British Columbians who care about their health and the health of the community. Strong relationships are required with organizations that play key roles in addressing the social determinants of health such as the Ministry of Education, the Ministry of Children and Family Development, the Housing Policy Branch and BC Housing.

Prevention and early detection of viral hepatitis depends on individuals and families having the knowledge and ability to manage their own health. This includes working with health care providers to understand potential risk behaviours, and taking all possible steps to prevent disease transmission, reduce harm and maintain and improve health. Social support provided by family, friends and peers can play an important role for those living with chronic viral hepatitis.
Immunization plays an important role in preventing transmission of some forms of viral hepatitis, and ongoing success relies on individuals and families valuing immunization as a cornerstone of public health. Effective, responsive programs require ongoing input from the individuals and families they serve.

Local government, community agencies and businesses, while not directly involved in providing services, can play an important role in helping the health system to achieve better results for people living with or vulnerable to viral hepatitis. Becoming knowledgeable about the condition and how it is acquired, developing policies and programs that promote healthy behaviours, being aware of and responsive to the needs of persons with viral hepatitis and creating welcoming environments for people regardless of their health status all contribute to creating healthier communities.

Physicians, allied health care professionals and contracted agencies across BC play a critical role in health promotion, disease prevention, screening and detection, diagnosis, treatment, care, support and palliation for persons with viral hepatitis. Current knowledge and access to epidemiological, diagnosis and treatment information supports family physicians in delivering effective front-line responses. Medical specialists provide the expertise required to facilitate knowledge exchange, generate evidence based on current research and data and provide leadership in late-stage disease management. Evidence shows that medical services that integrate across disciplines are more effective.

Health authorities are responsible for planning, delivering and evaluating prevention and care services. This includes working with regional and local partners to identify and develop the best responses to viral hepatitis as an element of protecting and enhancing the overall health of individuals and communities. A component of this work includes ensuring that existing and planned services effectively engage vulnerable populations.

As exemplified by the regional hepatitis demonstration sites, health authorities draw on the best available evidence to develop a complete service continuum and accomplish objectives within available resources. BC's health authorities have a prominent role to play in the development of a broader, integrated and interdisciplinary service delivery model as articulated within Healthy Pathways Forward.

Created in response to British Columbia's 1999 Viral Hepatitis Strategy, BC Hepatitis Services carries out four functions: surveillance and response; applied research; disease prevention and control; and education. The BCCDC, an agency of the Provincial Health Services Authority, is responsible for managing Hepatitis Services (planning, organizing, budgeting, supervising, coordinating, directing, monitoring and evaluating) and ensuring provincial funds are expended to implement hepatitis-related activities. In partnership with regional health authorities, Hepatitis Services supports five demonstration sites to model, test and refine best practices in diverse settings. Hepatitis Services also provides information to health authorities essential to achieving stewardship and demonstrating accountability. The BCCDC also collaborates with regional health authorities to deliver immunization programs—an important tool in preventing hepatitis A and hepatitis B.

As stewards of the health system, the Ministry of Health leads and supports health system partners, including health authorities, physicians and other care providers. The ministry sets overall strategic direction for the health system, provides the appropriate legislative and regulatory frameworks to allow it to function smoothly, and plans for the future supply and use of health professionals, technology and facilities. The ministry also monitors the health of the population and plans for and coordinates responses to major public health risks and emergencies.

The ministry works to ensure a consistent level of service quality across the regions with no significant service gaps. Lastly, the ministry evaluates health system performance, and takes corrective action where necessary to ensure the population's health needs are being met. The Ministry of Health works in partnership with the BCCDC, health authorities and primary care physicians to deliver viral hepatitis services in BC.

World Health Organization. The World Health Report 2000

The ministry also promotes coordinated approaches across related policy domains—for example, there are opportunities to link activities identified within this framework with related initiatives informed by the existing HIV/AIDS directional document, *Priorities for Action in Managing the Epidemics: HIV/AIDS in BC, 2003-2007* (MOHP & MOHS, 2003, September); *BC's Expanded Chronic Care Model* (MOH, Chronic Disease Management, 2005); *Every Door is the Right Door: A BC Planning Framework for Problematic Substance Use and Addictions* (MOHS, 2004, May); and *Immunize BC: a Strategic Framework for Immunization in BC* (MOH, 2007).

The provincial government works across a number of ministries to bring about improvements in the social determinants of health. The ability to educate and reduce risk among young people is strengthened through partnerships with the Ministry of Education and the Ministry of Children and Family Development. The Ministry of Employment and Income Assistance plays an important role in providing income and health benefit supports to assist people with viral hepatitis. Through the BC Corrections Branch there is an opportunity to provide enhanced prevention, screening and early detection to a potentially high-risk population.

At the national level, the Public Health Agency of Canada works with provinces and territories to promote and protect the health of Canadians. A significant part of its mandate is to decrease the transmission of infectious diseases and to improve the health status of those infected. Through the Centre for Infectious Disease Prevention and Control, surveillance and epidemiology, risk management, research including laboratory science, health promotion, public health policy development and prevention and care programs are delivered.

Most health service delivery to on-reserve First Nations communities is the responsibility of Health Canada. Services are delivered by the First Nations Inuit Health Branch or by First Nations themselves; in some areas this is carried out in cooperation with regional health authority staff.

Citizenship and Immigration Canada (CIC) is responsible for assessing the health status of refugees and immigrants prior to their arrival in Canada. In addition, CIC provides information and support to refugees and immigrants as they transition toward citizenship. CIC can play a pivotal role in screening and early detection, and in offering public health information to ensure people are aware of the disease and where to seek help.

Correctional Service Canada is responsible for inmates sentenced to terms greater than two years. During incarceration inmates are provided with a range of health care services. There is an opportunity to provide information about how the disease is acquired and ways of reducing risk, as well as screening, early detection and diagnosis of persons who have contracted the disease. Because of the longer duration of incarceration, there is an opportunity to provide more intensive and prolonged interventions.

The success of Healthy Pathways Forward depends on sustaining and enhancing effective, well-defined partnerships.

Principles and Values

The following principles and values serve as guides for implementing the strategic framework—they are intended to assist partners in making appropriate decisions under a variety of circumstances.

A population health approach emphasizes activities that result in the greatest good for the community. By treating the "community" as client, rather than focusing on individual, acute, episodic events, this approach strives for the best possible outcomes for the greatest number of people. This approach aims for equality of access and equity of health outcomes for individuals, families and communities. Taking an ethical approach means assessing actions against the standards of non-malfeasance, beneficence, justice and autonomy.

Efforts to reach and engage vulnerable populations are enhanced by implementing a harm reduction approach—policies and programs that mitigate the adverse health impacts of drug use without requiring cessation. Detailed discussion of harm reduction is contained in two provincial documents: *Every Door is the Right Door: A British Columbia Planning Framework to Address Problematic Substance Use and Addiction* (MOHS, 2004, May) and *Harm Reduction – A British Columbia Community Guide* (MOH, 2005).

System sustainability requires defining the system broadly (e.g., from health promotion, prevention, diagnosis, treatment, care and support to palliation), managing all parts of the system as a cohesive whole, and creating and sustaining relationships with traditional and non-traditional partners. At a macro level this is evidenced by multi-sectoral planning and service coordination; at a middle level the health care organization remains essential but the community assumes prominence; and at the micro level it is reflected in the creation of inter-disciplinary service delivery models. Integration provides opportunities for cross-fertilization across professional disciplines, an enriched skill and knowledge base and better use of limited resources.

With limited resources, it is important to measure and demonstrate progress in achieving mutually defined goals. Accountability requires a clear purpose, clear roles and responsibilities, identified goals, objectives and progress measures and a commitment to evaluating performance and publicly communicating results.

Optimal policy and programming responses are achieved through continuous learning from other jurisdictions, from local experience with emerging/promising practices and from the voice of clients and communities. Continuous learning leads to integrating new knowledge in practical, sustainable and affordable ways.

By linking continuous learning with program evaluation and improved surveillance data, services can be improved, planning decisions can be informed by evidence and innovation can be encouraged. Continuous learning supports stakeholders to recognize the importance of system evolution and to participate in the change management process.

Participatory, collaborative approaches go beyond identifying risks by engaging individual and community strengths, assets and resiliency factors, and by building capacity by working with formal communities (such as municipalities or neighbourhoods), informal communities (defined by common characteristics or practices such as injection drug use) and communities of interest (for instance, groups sharing a common culture or language). Taking a participatory and collaborative approach implies trust between professionals, service providers, policy makers and clients and their communities. Such trust is evidenced through the sharing of information and sharing of resources. It is based on cooperative rather than competitive approaches—where competition exists, it is moderated and healthy.

Services will be client-centred—determining what is needed based on the unique circumstances of the individual, recognizing the individual is part of a larger community and acknowledging individuals and communities have assets that contribute to successful outcomes. Clients are treated with dignity and respect, and services are culturally, linguistically, age and gender appropriate.

BC Ministry of Health Goals

The BC Ministry of Health articulates three overarching goals for the province's health system. These goals are:

1. *Improved Health and Wellness for British Columbians*
2. *High Quality Patient Care*
3. *A Sustainable, Affordable, Publicly Funded Health System*

The directions articulated within *Healthy Pathways Forward* were shaped by these goals, and the strategies advanced by the framework are expected to contribute directly to progress in achieving desired health system outcomes.

Vision, Mission and Goals

A vision paints a picture that inspires all partners to aim for something beyond their reach. The vision to guide programs and services addressing viral hepatitis and associated vulnerabilities within British Columbia is: *Healthy pathways towards a hepatitis-free BC.*

British Columbians will experience improved health and wellness by being empowered to reduce vulnerability to viral hepatitis and by being engaged in seamless systems of care, responsive to individual, family, environmental and community needs. Progress will be made on the control and elimination of acute and chronic hepatitis for all British Columbians through the implementation of population health strategies and integrated health promotion, disease prevention, harm reduction, diagnosis, treatment, care, case management and support services.

Figure 4: Vision, mission, goals and priorities

Vision
Healthy pathways towards a hepatitis-free BC
Mission
British Columbians will experience improved health and wellness by being empowered to reduce vulnerability to viral hepatitis and by being engaged in seamless systems of care, responsive to individual, family, environmental and community needs. Progress will be made on the control and elimination of acute and chronic hepatitis for all British Columbians through the implementation of population health strategies and integrated health promotion, disease prevention, harm reduction, diagnosis, treatment, care, case management and support services.
Strategic Goals
1
Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease
2
Enhance program reach and engagement of vulnerable populations in the health promotion, prevention, care, treatment, and support service continuum
3
Strengthen the system's capacity to respond
4
Create seamless service delivery
Strategic Priorities
• Create an integrated community-based model
• Expanded and enhanced partnerships
• Integrated Learning
• Improve surveillance capacity

GOAL 1

Prevent new hepatitis infections and reduce the risk of those infected progressing to serious liver disease.

Rationale

In 2005 a total of approximately 4,460 people in BC were newly identified as infected with viral hepatitis, of which 2,880 were infected with hepatitis C (HCV). While new cases of viral hepatitis appear to be on the decline, BC's rates—with the exception of acute HBV—remain above the national average. Of particular concern, the annual rate of newly identified HCV infections in BC (67.9 per 100,000) remains well above the national rate of 39.0 (BCCDC, 2006).

In addition, as of January 1, 2006, testing had confirmed 52,599 British Columbians were infected with HCV. A further 20,000 British Columbians are estimated to be infected with HCV but have yet to be diagnosed. Evidence has shown that about 25 per cent of those infected with HCV will spontaneously clear their infection, while the remainder will remain chronically infected. Therefore the total number of people currently living with HCV in British Columbia is likely 55,000 to 60,000. In addition, approximately 60,000 British Columbians are chronically infected with HBV (BCCDC, unpublished data).

The costs of treating HBV and HCV are high; moreover, the costs of chronic hepatitis represent a huge lifetime burden on the health system. Persons infected with viral hepatitis (in particular HBV and HCV) are likely to experience other co-morbidities such as addiction, arthritis and diabetes. An estimated 1,050 to 2,625 British Columbians are infected with both HIV and Hepatitis C (BCCDC, unpublished data).

Statement of Direction

Reducing the incidence and impact of viral hepatitis requires adopting a broad population health approach. Taking the World Health Organization definition of health as a guide—"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948)—a comprehensive continuum of activities from health promotion through primary, secondary and tertiary prevention activities is required. This approach takes into consideration the social determinants of health (e.g., housing, income level, education) as well as ethnicity and gender. The success of the health promotion and prevention initiative requires extensive connection and collaboration among client, family service providers and community (see Goal 2).

Continued emphasis on immunization for hepatitis A and B and broader application of the lessons learned from the provincial demonstration sites will form the basis for sustained success in reducing the incidence and impact of disease. Particular attention must be given to increasing knowledge and awareness in vulnerable populations, creating new mechanisms to reach people, integrating harm reduction and chronic care management approaches and implementing health promotion and protection practices. Harm reduction strategies, in particular, can play a critical role in preventing the transmission of viral hepatitis.

Harm reduction strategies include: needle exchange programs (including needle distribution, mobile exchanges and secondary distribution) throughout affected communities including inside correctional facilities; safe needle disposal; low-threshold approaches to addictions treatment such as methadone; and pilot programs such as supervised injection facilities and the medical prescription of heroin[5].

Strategies and Objectives

1. Work with health authorities to set targets to reduce the incidence of infection and to improve chronic disease management.

    1.1 Develop a mechanism to determine targets and measures at both a provincial and regional level.

    1.2 Define current incidence and prevalence and set a baseline.

    1.3 Health authorities to set short- and longer-term targets and develop and implement strategies to meet targets.

    1.4 Ministry of Health and health authorities to agree on a process to measure results for the purpose of annual progress reporting.

2. Continue and expand activities that are working.

    2.1 Continue and expand universal and targeted HAV and HBV immunization programs.

    2.2 Continue and expand demonstration site activities that have been shown to be effective (e.g., prevention, shared care, chronic disease management, inter-disciplinary approach).

3. Explore emerging evidence-informed interventions.

    3.1 Investigate feasibility and cost-benefit of universal HAV and HBV immunization for travelers to endemic countries and high-risk populations.

    3.2 Explore the feasibility of designing and implementing a comprehensive testing program for HBV.

    3.3 Identify population groups who are not currently being reached through prevention efforts and develop strategies to reach them.

4. Increase awareness of, and access to primary, secondary and tertiary prevention measures for infected and vulnerable populations.

    4.1 Develop and implement strategies to increase knowledge of modes of transmission and control for HBV and HCV infection in a variety of settings (e.g., correctional facilities; refugee and immigrant receiving and service centres; high schools).

4.2 Further expand provincial support for low-threshold harm reduction initiatives including supervised injection/consumption sites, needle exchanges and addiction treatment services, and a randomized trial of prescribing controlled substances, and ensure that they are accessible and culturally appropriate to populations most vulnerable to hepatitis infection (MOHP & MOHS, 2003, p. 3).

4.3 Implement a social marketing campaign to increase awareness of how viral hepatitis is transmitted and to counter misperceptions and stereotypes.

5. **Implement health promotion activities, building on individual and community strengths.**

5.1 Investigate the implications of the social determinants of health in relation to vulnerability to viral hepatitis in specific populations and communities.

5.2 Develop cross-sectoral strategies to address social factors.

5.3 Develop and implement strategies including development of tools and resources to engage specific communities (e.g., persons who use injection drugs, Aboriginal people, vulnerable youth, correctional inmates) in health promotion activities.

GOAL 2

Enhance program reach and engagement of vulnerable populations in the prevention, care, treatment and support service continuum.

Rationale

There is significant stigma associated with viral hepatitis infection, particularly HCV; as well, populations likely to become infected may be difficult to reach due to a variety of factors including transience, drug use and/or language and cultural barriers. Hard-to-reach populations include refugees and new Canadians from endemic countries, persons who use injection drugs, inmates in correctional facilities, men who have sex with men, vulnerable youth[6] and Aboriginal people.

Stigma not only affects populations likely to become infected, but also creates barriers to accessing services for persons living with chronic viral hepatitis. People must be supported to manage their condition to the greatest extent possible regardless of how they acquired the disease.

Statement of Direction

Increasing program reach and client engagement requires mobilizing both individuals and community to share knowledge, identify needs and develop and implement appropriate plans of action.

Increased emphasis must be placed on engaging hard-to-reach populations and including them in the process of achieving long-term success—hard-to-reach populations are an ongoing source of new infections and often lack the influence needed to garner adequate attention to their health needs. Success depends on removing barriers to service; including clients in service planning and evaluation; building relationships with other parts of the health system to reach clients (e.g., methadone clinics); building relationships with communities (e.g., Aboriginal community, geographic communities, other communities of interest); building relationships with external partners (e.g., corrections, immigration; social services and education sectors); and building public support for the program.

The elements of successful programming for vulnerable youth—youth leadership, respect, appropriate support, appropriate materials and targeting to specific audiences—may inform approaches for other hard-to-reach, vulnerable populations (Health Canada, 2004).

Health care and service providers must keep abreast of new developments in screening, diagnosis, treatment and care. New models of community and client engagement must be explored—models that build on strengths and resiliency and enhance community capacity.

Four components support the effective management of chronic conditions: self-management support, delivery system design, decision support and clinical information systems.

Self-management support emphasizes the role of the patient, family and community to understand and better care for the individual's illness by providing tools and resources supplemented by an ongoing collaborative process between patients and professionals. Delivery system design emphasizes creating the capacity for the system to respond across different disease events, along the continuum of health activities from health promotion to palliation and drawing on an array of expertise. Decision support provides protocols and guidelines based on evidence and best practice, which is integrated into decision making. Clinical information systems such as a disease registry can provide vital information about successful processes and interventions.

This goal focuses on strategies that support and enable patients and their families to more effectively manage the disease. Activities that address delivery system design, decision support and clinical information systems are addressed in Strategic Goal #4 – Creating Seamless Service Delivery.

With an aging population, it is important to analyze the potential impact those living with chronic conditions will have on the health care system and the economy, develop plans for an anticipated increase in the prevalence of late stage chronic viral hepatitis and find ways to mitigate the negative impacts to individuals, communities and society.

Strategies and Objectives

1. **Engage more effectively with hard-to-reach populations[7] across the prevention, care, treatment and support continuum.**

    1.1 Identify the unique characteristics and needs of specific sub-populations and the current barriers to engagement.

    1.2 Define the health promotion, prevention, care, treatment and support needs of these populations.

    1.3 Create and implement strategies designed to more effectively reach target populations.

    1.4 Work with Correctional Service Canada and the BC Corrections Branch to increase the proportion of inmates tested for hepatitis.

2. **Prevent discrimination against people affected by hepatitis and reduce the stigma and isolation experienced by them.**

    2.1 Identify the attitudes, values and beliefs that keep people from accessing services or discourage providers from offering service.

    2.2 Identify ways cultural groups can access resources and information and integrate them into program and service design.

    2.3 Implement a public education program to ensure the public knows the risks associated with viral hepatitis, is aware of appropriate health promotion activities and is encouraged to access services.

2.4 Identify the barriers that service providers face in offering services to persons with viral hepatitis.

2.5 Implement a professional education program to address values, attitudes and beliefs and increase service provider participation with appropriate information and tools.

3. **Work in collaboration with Aboriginal communities to develop a complementary, culturally-appropriate implementation strategy related to *Healthy Pathways Forward* for Aboriginal British Columbians.**

4. **Strengthen the community's capacity to respond to viral hepatitis.**

4.1 Investigate and develop mechanisms to improve community capacity to engage and support vulnerable populations and persons living with hepatitis.

5. **Develop and implement effective self-management support strategies.**

5.1 Build the partnerships required to engage service providers, patients, and non-governmental organizations in knowledge brokering (e.g., mechanisms for developing self-management skills).

5.2 Identify determinants of co-morbidities and better manage concurrent disorders.

5.3 Identify and implement wellness strategies for persons living with chronic disease.

6. **To improve capacity to provide appropriate late-stage chronic disease management.**

6.1 Explore the specific nature of clinical care required in the context of co-morbidities and co-infections.

6.2 Develop a chronic disease management model for viral hepatitis.

6.3 Explore palliation needs and develop practice guidelines for palliation care for late-stage hepatitis.

6.4 Apply, where appropriate, lessons learned through implementation of *British Columbia's Expanded Chronic Care Model* (MOHS, 2004, May).

GOAL 3

Strengthen the health system's community response capacity.

Rationale

Significant progress has been made since the implementation of British Columbia's 1999 Viral Hepatitis Strategy in strengthening the infrastructure and service delivery system. In particular, the creation of BC Hepatitis Services at the BCCDC provides a focal point for improved surveillance, research and evaluation activities. However, rapid advances in knowledge continue to pose challenges across the service delivery system. Surveillance, research and evaluation activities must be attuned to the needs of both communities and service providers, and new knowledge exchanged to support its application. For instance, new nursing models implemented through the demonstration sites seem to be working. Can their effectiveness be demonstrated? Can the approach be replicated across the system? Opportunities for knowledge exchange with other program areas such as chronic disease management and addictions must be explored.

Immunization programs are available for both hepatitis A and B, so prevention is clearly a priority. There is no vaccine available for hepatitis C, and while approximately 25 per cent of persons contracting the disease will clear spontaneously, for the rest of the population hepatitis C is a chronic disease. There is a very limited spectrum of treatment available, and it is costly, time-consuming and can be extremely debilitating. Medications available to treat HCV are not well tolerated by some individuals, and as a result successful completion of treatment can be a significant challenge. More emphasis must be placed on improving appropriate access and readiness for treatment and providing support during and after treatment.

At the same time, guidelines that determine eligibility for treatment of HCV must be reviewed and updated regularly to reflect current evidence and be constructed with as few barriers as possible. As it becomes increasingly common that HCV infection can be effectively 'cured' through treatment, it is critical that all opportunities to reduce the individual and societal burden of this disease are taken. Successful suppression and/or elimination of active HCV infection through pharmaceutical treatment benefits not only the health and longevity of the individual in question, but also prevents them from infecting others with the virus.

Statement of Direction

Building on the success of the 1999 Viral Hepatitis Strategy, more emphasis must be placed on developing capacity across the health system. Streamlining the surveillance, Pharmacare and research functions would better meet service providers' needs for information. Integrating research efforts with the evaluation of promising practices can encourage innovative practice that balances the need to gather evidence with the opportunity to move ahead. From a systems perspective, relationships with a wider range of external partners are required to broaden program capacity. Health care and service providers must be supported to deliver the highest standard of care based on emerging knowledge. From a consumer perspective, attention must be paid to reducing barriers to treatment and creating pathways to achieve the best possible outcomes.

An effective surveillance system is essential if progress is to be measured. Surveillance is "the ongoing systematic collection, analysis and interpretation of data and the dissemination of information to those who need to know in order that action be taken. The objective of surveillance is to provide timely information to guide the planning, implementation and evaluation of public health interventions and systems" (World Health Organization, 2001). In other words, surveillance is information for public health action.

There are six universal functions of surveillance: detection and notification of health events; investigation and confirmation (epidemiological, clinical and virological); data collection and consolidation; data analysis and production of routine reports; feed-forward; and feedback. Monitoring and evaluation is an activity distinct from surveillance; it is the process of evaluating data to assess overall performance at the system level.

Improved screening and early detection capacity is required to reduce the time lag between the time of infection and testing. Early detection must take into consideration that vulnerability occurs on a continuum from those who participate in no-risk behaviours to those who are actively engaged in risk behaviours.

Strategies and Objectives

1. **Ensure the screening surveillance system provides accurate data on hepatitis to support primary and secondary prevention, education and medical management.**

    1.1 Establish baseline incidence and prevalence measures.

    1.2 Create an integrated data plan that meets all stakeholders' needs, identifies critical data linkages, eliminates data duplication and develop protocols to encourage data sharing between silos.

    1.3 Build on opportunities for surveillance improvement presented by the eHealth (electronic health record) initiative.

    1.4 Develop an effective sentinel surveillance system through linking existing data sources to enable the province and health authorities to anticipate new epidemiological trends and service needs linked with viral hepatitis and other co-infections (cross referenced from MOHP & MOHS, 2003, September).

    1.5 Enhance screening and early detection capacity through the development of processes, practice guidelines and improved reporting and interpretation of test results.

2. **Ensure research and evaluation activities assist with decreasing the incidence of viral hepatitis and benefit those with chronic hepatitis.**

    2.1 Establish mechanisms to foster knowledge exchange and transfer including a research/data clearinghouse.

    2.2 Investigate the implementation of an integrated research program which integrates all disciplines including social and medical research.

2.3 Evaluate select demonstration sites, promising practices for client and community engagement and new nursing models, and share results widely.

2.4 Undertake evaluation to determine the benefits of health promotion and disease prevention activities using a variety of modalities including community-based research.

3. **Ensure service providers have the information, knowledge and skills to achieve program goals and objectives.**

3.1 Articulate and disseminate the skills, attitudes and values, supported by best practice and evidence, required to effectively work with hard-to-reach populations.

3.2 Articulate and disseminate criteria for achieving interdisciplinary practice and incorporate emerging best practices.

3.3 Formally assess service providers' educational needs.

3.4 Ensure the current viral hepatitis curriculum for health professionals is comprehensive and up-to-date.

3.5 Determine the education and information needs of primary care physicians and implement a strategy to make it available.

3.6 Provide platforms for skill-building and information-sharing among providers.

3.7 Improve the ability and capacity of clinicians to effectively screen and test.

4. **Ensure appropriate access to treatments for viral hepatitis.**

4.1 Develop a dynamic, responsive mechanism to ensure that future Pharmacare treatment guidelines reflect evolving evidence and best practice.

4.2 Investigate the potential outcomes related to the early treatment of acute HCV infections.

4.3 Improve adherence and follow-through for populations requiring extra support by considering treatment modalities such as Directly Observed Therapy (DOT) and Maximally Assisted Therapy (MAT).

4.4 Review current policies on all blood-borne pathogens to seek a consistent approach to treatment.

4.5 Assess post-treatment needs for those successfully treated and develop responses.

GOAL 4
Creating seamless service delivery.

Rationale

Poor coordination between programs, departments and organizations, a weak continuum of services from prevention through to care, and lack of consumer and community involvement in program development and delivery together result in program fragmentation and wasted resources. Experience from BC's demonstration sites suggests that breaking down artificial barriers between services, service providers and sectors leads to effective, timely services that better meet the needs of persons living with, or vulnerable to acquiring, viral hepatitis.

Statement of Direction

Improved integration, coordination and collaboration are achieved by implementing a service delivery model rooted in the principles of community-development, consumer involvement and shared-care. The model acknowledges the impact that the social determinants of health play in achieving positive health outcomes, and emphasizes a continuum of services from health promotion, prevention, screening, diagnosis, treatment, care and support. It takes a life cycle approach to working with individuals—building a supportive environment from birth to death. It integrates the best of chronic disease management with viral hepatitis-specialized health and treatment information and personal advocacy. It features integrated or interdisciplinary delivery teams incorporating a variety of skills and expertise. Successful shared care models have the following attributes: clarity of roles and encouragement of role flexibility; appropriate fee systems to pay physicians, other health care providers, ancillary professional staff and community support workers; information technology and management support that facilitates data collection and information sharing; and the capacity to track cohorts so outcomes can be measured.

Successful program integration must go beyond traditional partnerships to create working relationships with organizations outside of the direct service system that have the potential to impact on broader determinants of health.

These partnerships could include the school system, the Ministry of Employment and Income Assistance, the Ministry of Children and Family Development, BC and federal correctional services, Citizenship and Immigration Canada and Aboriginal program, policy and leadership forums. A broad spectrum of service providers, government departments and community organizations should be engaged as partners in achieving the strategic framework's desired outcomes. The test of an integrated care model is that no line of legislation, financing or ownership interferes with an individual's progress through the system of care (Kekomaki, 2001).

The result of successful integration is seamlessness from the consumer's perspective—a service that systematically moves individuals, in a timely way, along appropriate care pathways towards the best possible outcomes. Consideration is given to individuals, and the family members, friends and caregivers who form their support system.

Strategies and Objectives

1. Design/adapt and implement a shared-care, community development-based model, providing a continuum of health promotion, prevention, diagnosis, treatment, care, support and palliation.

    1.1 Articulate key elements of an integrated shared-care, community development-based model for viral hepatitis that incorporates the continuum of services.

    1.2 Identify barriers to integration and develop strategies to address.

    1.3 Pilot a new shared-care model over five years.

    1.4 Identify opportunities for further testing new approaches from existing demonstration sites.

2. Ensure all opportunities to increase program reach are investigated.

    2.1 Expand circle of partners to include opportunities to reach potential clients through low-threshold services (e.g., housing, employment) and reach high-risk populations by establishing working protocols with corrections services, immigration services and Aboriginal health policy makers and service providers.

    2.2 Incorporate lessons learned in hepatitis service delivery into mainstream service delivery—taking advantage of opportunities in other parts of the health care system to advance hepatitis reduction and management goals and objectives.

3. Ensure an integrated response with other government organizations (e.g., federal and provincial correctional facilities, First Nations and Inuit Health Branch, Ministry of Children and Family Development, Ministry of Education, Ministry of Employment and Income Assistance, Citizenship and Immigration Canada).

    3.1 Work with other government agencies to identify common interests and barriers to progress, and develop plans for consistent approaches.

    3.2 Work with Citizenship and Immigration Canada to have screening for HBV and HCV added to the standard immigration medical examination.

    3.3 Identify and advocate for required policy changes, including developing policies which integrate all aspects of care across chronic and concurrent disorders.

Strategic Priorities

The following four strategic priorities are intended to both respond to immediate, pressing needs and lay the foundation for future activities. They are equally important, and require simultaneous and immediate action.

I. ***Create an integrated, community-based service model.*** Articulate a community development service model that integrates the continuum from health promotion, prevention, diagnosis, treatment, case management, self-management, care and support, and is designed to meet the needs of the hard-to-reach as well as mainstream populations.

II. ***Expand and enhance partnerships.*** Create a community-based groundswell of support for the objectives of the framework by engaging clients, families, service providers, traditional and non-traditional community partners, and by promoting better communication among all partners.

III. ***Improve surveillance capacity.*** Ensure data gathering capability at both the population level (e.g., age, income, education, housing, etc.) and the individual level (e.g., incidence of disease by cohorts). Data analysis must examine both risk and resiliency factors in order to determine why some high-risk populations do better than others. The information gathered must be used to plan and implement the community-based service model and to educate and inform all stakeholders.

IV. ***Integrate learning.*** Evaluate seemingly successful efforts, and enhance them where warranted. Place emphasis on providing accessible and useful management information. Foster engagement with hard-to-reach communities by sharing research and evaluation results. Use service provider and public education to share learning.

Evaluation

Measuring success requires establishing targets, benchmarks and standards associated with achieving major goals and objectives. Evaluating progress can assist in determining if strategies have been effective in achieving desired results in the short term (5 years) and the longer term (10 years). Monitoring and tracking progress also provides the evidence to support scaling up effective activities and helps identify activities that are no longer achieving desired results. Short-term targets generally relate to redesign, role reorientation and implementation milestones. Long-term evaluation generally measures the impact implemented strategies and activities have on population and sub-population level health outcomes.

An evaluation protocol will be developed among key partners, and will be designed to answer key questions. For instance, can a reduction in the incidence of viral hepatitis be measured? Over time, do more people engage in seeking and receiving service? Has the capacity of the service delivery system been improved? What indicators would measure progress in building a seamless service delivery system?

This framework has been developed to serve as a guide for the next 10 years. Along the way, information gathered through program evaluation and disease surveillance will be provided as part of a continuous feedback loop to assist policy makers, managers and service providers to make good program decisions. Information will also be distributed more broadly to provide improved tools and access to service and encourage changed attitudes and behaviours at the individual, family and community level. Formal public progress reporting will occur on an annual basis.

Over the long term, the evaluation will examine three dimensions:

1. Have the framework's strategic objectives been attained?
2. What effect has the implementation of the strategic framework had on different parts of the system (process evaluation)?
3. Have desired improvements in health outcomes been achieved?

Implementation

This document offers a broad strategic framework rather than a detailed strategic plan. Building on the vision and strategic directions outlined in this framework and informed by local, provincial and national data, all partners are invited to examine their options, establish priorities, set objectives and targets, elaborate strategic plans and service plans, project their resource needs and identify the availability of resources, and formulate monitoring and evaluation frameworks. The British Columbia Centre for Disease Control, the Ministry of Health and health authorities must begin by setting targets and priorities for immediate action.

There is considerable work currently underway in a variety of areas. Provincial, regional and local planning will benefit from building on the activities currently taking place such as the implementation of *Immunize BC: a Strategic Framework for Immunization in BC* (MOH, 2007); annual evaluation of provincial progress related to *Priorities for Action in Managing the Epidemics: HIV/AIDS in BC, 2003-2007*(MOHP & MOHS, 2003, September); the development of evidence papers and benchmarks to support core public health functions; and the development of related blood borne pathogens service plans at the regional level. Planning at all levels should seek the endorsement and support of senior decision makers.

It is also important to explore ways to provide opportunities for information-sharing and feedback and to ensure accountability in implementing the goals and objectives outlined in the framework. The progress in achieving the goals and objectives of the strategic framework will be monitored, and results reported through annual public reports.

Issues raised during the consultations that are specific to the implementation of the strategic framework are outlined in Appendix D.

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Glossary

There are various definitions of best practices. For example, best practices in health promotion are those sets of processes and activities that are consistent with health promotion values/goals/ethics, theories/beliefs, evidence and understanding of the environment, and that are most likely to achieve health promotion goals in a given situation.

Best practices represent proven methodologies for consistently and effectively achieving a business objective. Whereas a business process is simply a series of activities organized to achieve a specific business objective, a best practice is a business process with demonstrated ability to achieve *superior* results.

"An individual and organizational learning process that involves reflection, analysis, skill building, networking and action all aimed at increasing the knowledge, imagination, vision and impact of an organization and the individuals involved in it" (Columbia University, Center for the Study of Human Rights & The Banyan Tree Foundation, 2002, May).

Organizational capacity building refers to the process of ensuring an organization has the systems, physical assets, human resources, culture and ability to plan for the future while operating in the present.

Institutional capacity-building seeks to "strengthen institutional development by strengthening links and the development of environments within which organizations exist" (Green & Battcock, 2001). For example, this could include information sharing, lobbying, resource sharing and coordination.

Community capacity building is a community development process which builds on community assets to engage citizens in the process of addressing complex community issues. It involves "...strengthening people's understanding of their own needs, entitlements and rights, building their understanding and knowledge ....and enabling them to organize themselves to respond to this understanding" (Green & Battcock, 2001).

"A process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own visions of what is possible. Collaboration involves joint problem-solving and decision-making among key stakeholders in a problem or issue. Four features are critical to collaboration:

- the stakeholders are interdependent,
- solutions "emerge" by dealing constructively with differences,
- decisions are jointly owned,
- stakeholders assume collective responsibility for the future direction of the domain.

In collaboration it is normal to have a lack of clarity about who is a stakeholder, disparity of power and/or resources among stakeholders, complex problems that are not well defined, scientific uncertainty, differing perspectives that lead to adversarial relationships and dissatisfaction with previous and existing approaches and processes. Collaboration is a distinctly different process than coordination and cooperation:

- **Collaboration** is an emergent and evolving process of building substantive agreement.
- **Coordination** involves formalized, defined relationships among organizations.
- **Cooperation** involves informal trade-offs and agreements established in the absence of formal rules.

Both coordination (formalized process) and cooperation (informal process) often occur as part of a collaborative process. Once initiated, collaboration creates a temporary forum within which participants can seek consensus about a problem, invent mutually agreeable solutions and develop collective actions for implementation" (adapted from Gray, 1989, as cited in Chronic Disease Prevention Alliance of Canada, n.d.).

The concept of community has become more sophisticated due to the changing nature of business patterns and increased social fluidity. People may work longer hours, or move more often, finding themselves living far from close relatives, and feeling like transient members of their residential neighborhoods. But people still look for community, and many get that feeling from non-traditional sources such as the workplace, or through pursuit of other common interests (Rhodes et al., 2002). In fact, fluid definitions of community are not new: Aristotle suggests that harmony underpins the concept of community (Aristotle, trans. 1980), a group of individuals bound together by natural will and a set of shared ideas and ideals.

Any given community includes many distinct groupings of people. Through these groups, people act to achieve goals. Finding common needs and connecting these diverse groups is central to community development—meeting these general needs contributes to the greater well-being of the entire community, while strengthening social structures and the environment for economic development. Each of these groups possesses a wide range of skills, experiences and methods for addressing community needs and problems. Effective community development processes bring these many assets together to maximize positive community change (Brennan, 2004).

A concurrent disorder implies an individual is living with more than one health issue simultaneously, such as a mental health problem and a substance use problem. For example, someone with clinical depression who is also alcohol dependent has a concurrent disorder, as does a person living with schizophrenia, heroin dependence and HCV. The presence of multiple health problems may be described as co-morbidities, dual or multiple diagnoses or dual or multiple disorders (Canadian Mental Health Association, n.d.).

Health determinants are the "range of personal, social, economic and environmental factors which determine the health status of individuals or populations. The factors which influence health are multiple and interactive. Health promotion is fundamentally concerned with action and advocacy to address the full range of potentially modifiable determinants of health—not only those which are related to the actions of individuals, such as health behaviours and lifestyles, but also factors such as income and social status, education, employment and working conditions, access to appropriate health services, and the physical environments. These, in combination, create different living conditions which impact on health. Achieving change in these lifestyles and living conditions, which determine health status, are considered to be intermediate health outcomes" (Nutbeam, for the World Health Organization, 1998).

Directly Observed Therapy or DOT is the process whereby the ingestion of every dose of medication is directly observed in order to improve a patient's ability to adhere to a complex or challenging medication regimen. DOT is most closely associated with tuberculosis control efforts, but has also been applied to treatment of other conditions with complex or difficult medication regimens. In a study involving tuberculosis patients, from all socio-economic groups, almost all accepted directly observed therapy after the benefits to them and to society were explained to them: "to be successful, directly observed therapy must be individualized and must not be intrusive....Many freely admitted that during a previous infection they took medication irregularly or only until their symptoms resolved. Patients and staff members frequently developed close personal bonds" (Weis et al., 1994).

Evidence consists of research and evaluation findings (including process, outcome and economic evaluations), needs assessments, specialist and community knowledge, as well as the lived experiences of patients, their families, community leaders and service providers. The nature of the evidence needed depends on what is meant by effectiveness. Effectiveness refers to the extent to which the intended outcomes of an intervention are achieved in accordance with stated values, and within the limited resources available. There are other challenges facing communities seeking to apply evidence. Research, practice and policy have usually been constructed to affect the entire population without specific attention to differential effects on women and men or various subgroups such as Aboriginal men or teen girls. As such, evidence is usually lacking on the impact of population level policies on many sub-populations, as well as for targeted approaches that address vulnerabilities specific to diverse groups of women and men (MOHS, 2004).

The International Harm Reduction Association describes harm reduction as "policies and programs which attempt primarily to reduce the adverse health, social and economic consequences of mood altering substances to individual drug users, their families and communities, without requiring decrease in drug use" (MOH, 2005, p. 4). "Harm reduction is a term that covers activities and services that acknowledge the continued drug use of individuals, but seek to minimize the harm that such behaviour causes" (DrugScope, n.d.).

"In practice, harm reduction programs may include syringe exchange, replacement therapy using substances such as methadone, health and drug education, HIV and sexually transmitted disease screening, psychological counseling, and medical care" (Human Rights Watch, 2003). Harm reduction strategies are also designed to reduce the impacts of drug-related harm at the community level as well: "governments do not condone illegal risk behaviours such as injecting drug use, but they do acknowledge that these behaviours occur and that they have a responsibility to develop and implement public health and law enforcement measures designed to reduce the harm that such behaviours can cause" (South Australia Central, Department of Education and Children's Services, n.d.).

"Health promotion is defined by the World Health Organization as 'the process of enabling people to increase control over, and to improve their health.' Health promotion activities encourage individuals, families, and communities to make healthy lifestyle choices and to take a more active role in their health" (MOHS, 2004, p. 80).

"A primary health care (PHC) system involves health professionals working together and delivering care within the context of the broader determinants (e.g., education, environment, other socio-economic factors) that affect the health of individuals, families and their communities. A PHC system coordinates and integrates services to respond to the health status of the population. It includes illness prevention, health promotion, diagnosis and management of health concerns. It encourages the use of the health professionals from the most appropriate health discipline(s) to maximize the potential of all health resources (adapted from Mable & Marriott, 2002). It is the first level of contact with the health system, bringing health care as close as possible to where people live, learn and work.

To be effective, a PHC system is integrated with other services and sectors, for example secondary and tertiary health care, education, workplace, child welfare, and the criminal justice system. Effective responses at the primary health care level also diminish the need for services at other levels and in other sectors" (Enhancing Interdisciplinary Collaboration in Primary Health Care (EICP) Initiative, 2006, p. 2).

Inter-disciplinary practice can best be understood as part of a continuum from unidisciplinary practice to transdisciplinary practice:

- "**Unidisciplinary** practice involves functioning in isolation from members of other disciplines."
- "**Intradisciplinary** practice involves the contributions of different specialists within one discipline (such as physician consultations)."
- "**Multidisciplinary** practice refers to a clinical group whose members each practice with an awareness and toleration of other disciplines."
- "**Interdisciplinary** practice is an integrated approach in which members of a clinical team actively coordinate care and services across disciplines."

- "**Transdisciplinary** practice involves team members from different disciplines who share knowledge and skills; as a result, the traditional boundaries between professions become less rigid, allowing members of the team to work on problems not typically encountered or seen as the responsibility of their discipline." (Ray, 1998, p. 1369).

Knowledge brokering links researchers, policy makers and programmers together, facilitating their interaction so that they are able to better understand each other's goals and professional culture, influence each other's work, forge new partnerships and use research-based evidence; brokering is ultimately about supporting evidence-based decision-making in the organization, management and delivery of services.

The study and organization of knowledge brokering is an emerging activity in the field of knowledge exchange, intended to encourage and facilitate knowledge exchange and embed it into the operational culture of the health services field (Canadian Health Services Research Foundation, n.d.).

Maximally Assisted Therapy or MAT is an approach to medication adherence support that links medication management with other social or health services, such as nutritional services, support groups, and nursing care.

The population health approach aims to improve the health of the entire population and to reduce health inequities among population groups. In order to reach these objectives, population health approaches examine and act upon the broad range of factors and conditions that have a strong influence on our health. Strategies are based on an assessment of the conditions of risk and benefit that may apply across the entire population, or to particular subgroups within the population. This approach recognizes that health is a capacity or resource rather than a state, a definition which corresponds more to the notion of being able to pursue one's goals, to acquire skills and education, and to grow. The population health approach does not diminish the importance of the health care system, genetics, or other individual factors that contribute to the health of Canadians, but includes additional factors and the interactions between them (Public Health Agency of Canada, 1996).

"Covers measures not only to prevent the occurrence of disease, such as risk factor reduction, but also to arrest its progress and reduce its consequences once established (adapted from Glossary of Terms used in Health for All series, WHO, Geneva, 1984). Primary prevention is directed towards preventing the initial occurrence of a disorder. Secondary and tertiary prevention seek to arrest or retard existing disease and its effects through early detection and appropriate treatment; or to reduce the occurrence of relapses and the establishment of chronic conditions through, for example, effective rehabilitation. Disease prevention is sometimes used as a complementary term alongside health promotion. Although there is frequent overlap between the content and strategies, disease prevention is defined separately.

Disease prevention in this context is considered to be action, which usually emanates from the health sector, dealing with individuals and populations identified as exhibiting identifiable risk factors, often associated with different risk behaviours" (Nutbeam, 1998, p. 4).

Seamlessness results from successfully integrated all elements of the care continuum. "Quality delivery structure equals an integrated care model; the leading principle of patient-centered care must be that no line of legislation, financing, or ownership should cross the patient's path from primary care, hospital treatment, and rehabilitation. The principle of care integration is increasing in importance, when our societies grow old. Seamlessness, however it is created locally, is the only acceptable way to deliver care" (Kekomaki, 2001).

A system is an assemblage of inter-related elements comprising a unified whole. A sub-system is a system which is part of another system. A system consists of elements connected together to facilitate the flow of information, matter or energy—a group of interacting bodies under the influence of related forces. Applied to organizations such as the health system, systems theory suggests that specialty barriers can promote knowledge generation that is pursued in depth, but in isolation; "rather than getting a continuous and coherent picture we are getting fragments—remarkably detailed but isolated patterns" (Lazlo, 1996, p. 2). A systems approach attempts to look a range of different and interacting subsystems, and note their behavior as a whole under diverse circumstances; this approach is especially valuable in understanding and addressing the many factors that influence population health, including individual and community vulnerability.

Appendix A: Viral Hepatitis in BC Today

The following is a snapshot of data and trends related to viral hepatitis in BC through 2005. All surveillance data was supplied by the British Columbia Centre for Disease Control (BCCDC). Summary reports of diseases reportable under the *Health Act* are prepared each year, and published on the BCCDC website[8]. BC Hepatitis Services, a division of BCCDC, carries out four functions: surveillance and response; applied research; disease prevention and control; and education. The BCCDC also collaborates with regional health authorities to deliver immunization programs—an important tool in preventing hepatitis A and hepatitis B.

In 2005, approximately 4,481 people in BC were identified as infected with hepatitis A, B or C. Figure 5 shows the number of confirmed cases of each strain of hepatitis by health authority for the period.

Figure 5: Confirmed cases of hepatitis A, B, and C in British Columbia, by health authority, 2005

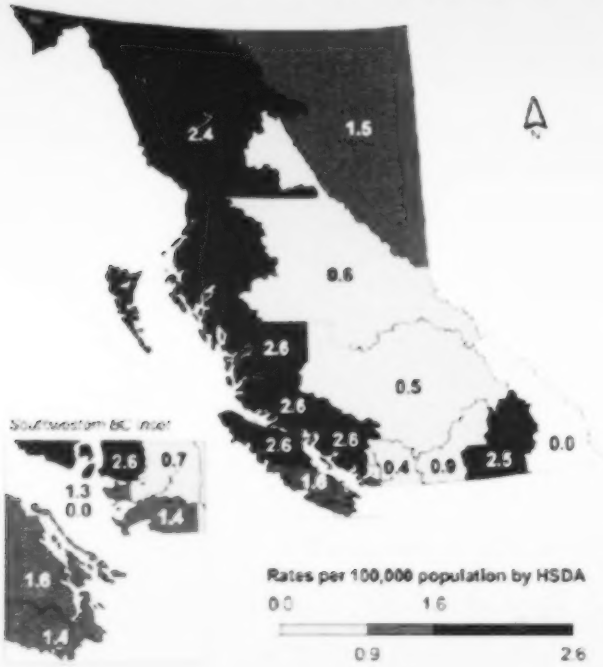
	HAV	ACUTE HBV	CHRONIC HBV	HCV
Fraser Health Authority	14	18	431	926
Interior Health Authority	6	8	13	486
Northern Health Authority	4	3	14	184
Vancouver Coastal Health Authority	15	12	975	751
Vancouver Island Health Authority	12	11	44	533

Source: BC Centre for Disease Control, unpublished data, 2006

A further analysis by type of viral hepatitis demonstrates the following:

Hepatitis A virus (HAV) causes only acute infections. Most Canadians are susceptible to HAV (Pham et al., 2005). With intensive identification of new infections, targeted vaccine programs and post-exposure prophylaxis, reported HAV infections have stabilized at a low rate—declining from 12.3 cases per 100,000 people in 1996, to 1.2 cases per 100,000 people in 2005 (BCCDC, 2006).

Figure 6: Hepatitis A rates by HSDA, 2005

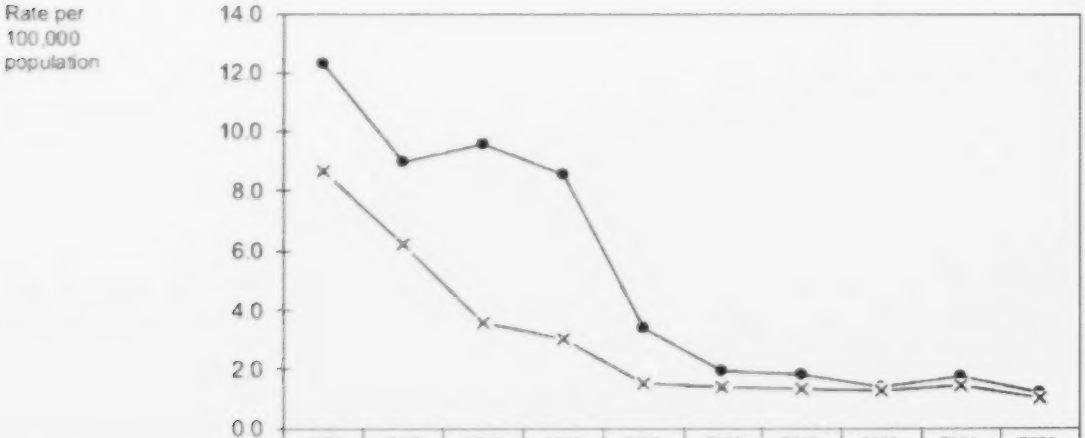


HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	2	2.5
13	Okanagan	3	0.9
14	Thompson Cariboo Shuswap	1	0.5
21	Fraser East	1	0.4
22	Fraser North	4	0.7
23	Fraser South	9	1.4
31	Richmond	0	0.0
32	Vancouver	8	1.3
33	North Shore/Coast Garibaldi	7	2.6
41	South Vancouver Island	5	1.4
42	Central Vancouver Island	4	1.6
43	North Vancouver Island	3	2.6
51	Northwest	2	2.4
52	Northern Interior	1	0.6
53	Northeast	1	1.5

Note: Map classification by Jenks natural breaks method.

Source: BC Centre for Disease Control, 2006

Figure 7: Hepatitis A rates by year, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BC Hepatitis A Reports	478	356	382	344	136	78	75	57	74	51
BC Hepatitis A Rate	12.3	9.0	9.6	8.6	3.4	1.9	1.8	1.4	1.8	1.2
Canadian Hepatitis A Rate	8.7	6.2	3.6	3.0	1.5	1.4	1.3	1.2	1.4	1.1

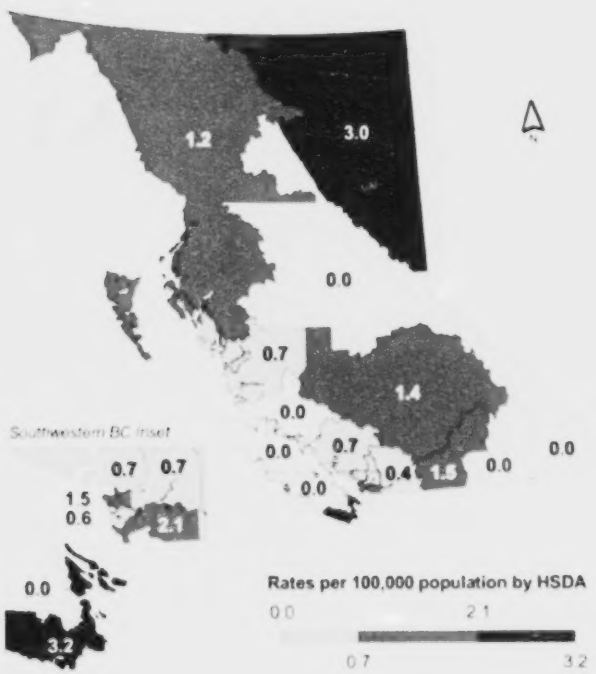
Source: BC Centre for Disease Control, 2006

The widespread use of HAV vaccine in higher-risk groups such as men who have sex with men and injection drug users has dramatically reduced the incidence of acute HAV in these sub-populations since the mid-1990s. Imported food products, HAV-infected food handlers and travel to HAV-endemic regions of the world are now the most commonly identified risk factors in those newly HAV-infected in BC.

In 2005, the reported rate and number of acute hepatitis B (HBV) infections continued a pattern of annual decline. Fifty-two acute HBV cases were identified, representing a rate of 1.2 per 100,000 people. Figure 8 illustrates the number and rate of acute HBV cases reported in 2005 by health service delivery area. Figure 9 depicts annual provincial rates of acute HBV infections in relationship to the Canadian rates over a ten year period. The decline in the rate for BC continues to be a consequence of the introduction of provincially funded HBV immunization programs, including the grade 6 student program instituted in 1992 and the universal infant program instituted in 2001, as well as targeted vaccination of at-risk populations (BCCDC, 2006).

However it is estimated that 60,000 BC residents are already chronically infected with HBV (BCCDC, unpublished data, 2006). This is largely due to immigration from HBV-endemic regions of the world where approximately 5 per cent to 15 per cent of the overall population are chronic HBV carriers (BCCDC, unpublished data, 2006). Figure 10 illustrates the number of people in BC identified as chronically infected with HBV between 1996 and 2005. The BC Centre for Disease Control estimates that approximately 34,000 people in BC have been identified as living with chronic hepatitis B (BCCDC, unpublished data, 2006).

Figure 8: Acute hepatitis B rates by HSDA, 2005

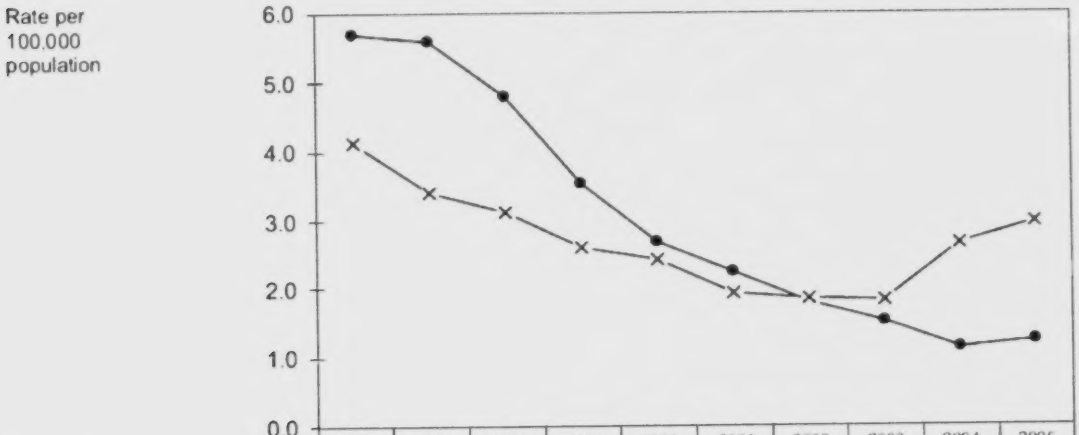


HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	5	1.5
14	Thompson Cariboo Shuswap	3	1.4
21	Fraser East	1	0.4
22	Fraser North	4	0.7
23	Fraser South	13	2.1
31	Richmond	1	0.6
32	Vancouver	9	1.5
33	North Shore/Coast Garibaldi	2	0.7
41	South Vancouver Island	11	3.2
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	1	1.2
52	Northern Interior	0	0.0
53	Northeast	2	3.0

Note: Map classification by Jenks natural breaks method

Source: BC Centre for Disease Control, 2006.

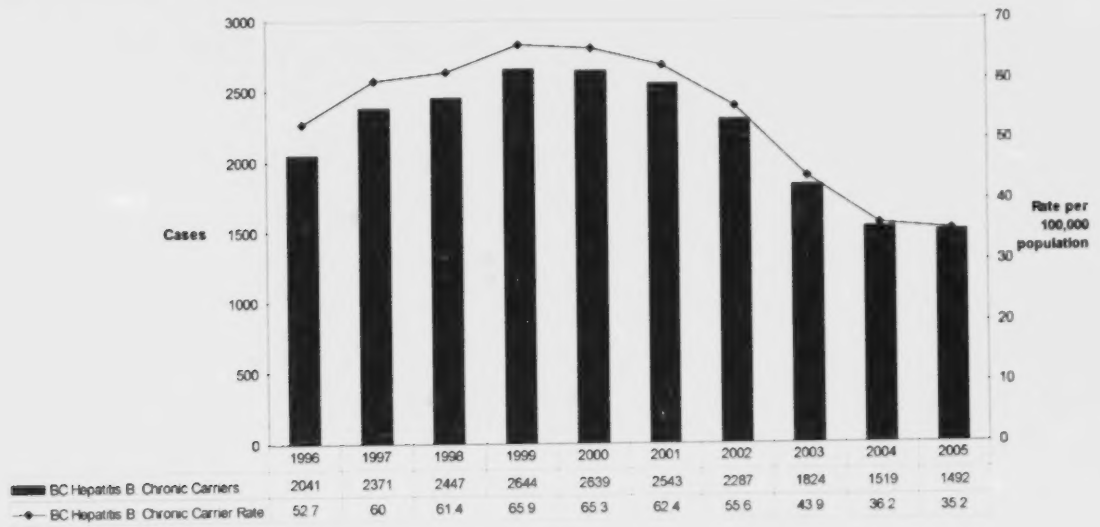
Figure 9: Acute hepatitis B rates by year, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BC Hepatitis B: Acute Reports	220	221	191	141	108	91	74	63	48	52
BC Hepatitis B: Acute Rate	5.7	5.6	4.8	3.5	2.7	2.2	1.8	1.5	1.1	1.2
Canadian Hepatitis B Rate	4.1	3.4	3.1	2.6	2.4	1.9	1.9	1.8	2.6	3.0

Source: BC Centre for Disease Control, 2006.

Figure 10: Chronic hepatitis B cases and rates by year, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BC Hepatitis B: Chronic Carriers	2041	2371	2447	2644	2639	2543	2287	1824	1519	1492
BC Hepatitis B: Chronic Carrier Rate	52.7	60	61.4	65.9	65.3	62.4	55.6	43.9	36.2	35.2

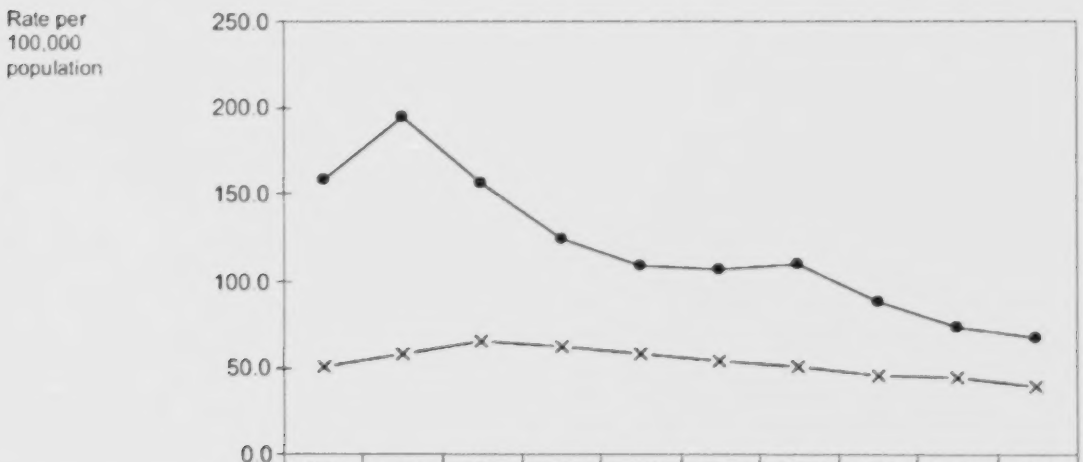
Source: BC Centre for Disease Control, unpublished data, 2006.

Chronic HBV infection has a substantial morbidity and mortality. As many as 25 per cent of those with chronic HBV infections who do not receive treatment will progress to cirrhosis, end-stage liver disease or liver cancer—or require liver transplantation (Mast et al., 2005). Chronic infections also remain a source for ongoing HBV transmission. In BC, most new HBV infections are transmitted through sexual contact.

As of December 31, 2005, 52,599 cases of confirmed hepatitis C (HCV) infection have been reported in BC, approximately 25 per cent of whom may have subsequently cleared their infection spontaneously. A further 20,000 British Columbians are estimated to be currently infected with HCV but remain undiagnosed (BCCDC, unpublished data, 2006).

In 2005, the rate of newly reported HCV infections declined to the lowest rate since 1995: 67.9 per 100,000 people or 2,880 new cases. However, as Figure 11 illustrates, BC's rate of reported HCV infections is currently twice that of Canada. The province's exceptionally high rates of 1996 and 1997 reflect an artifact of testing due to BC's blood system notification program to identify blood product-transmitted HCV infections. Despite the trend of overall annual declines in newly identified HCV cases, it must be recognized that the rate of acute HCV infections remains high, especially in injection drug user populations (Remis, 2003). This knowledge helps to define the vulnerabilities that currently drive transmission of HCV, and inform approaches to prevention.

Figure 11: Hepatitis C rates by year, 1996-2005



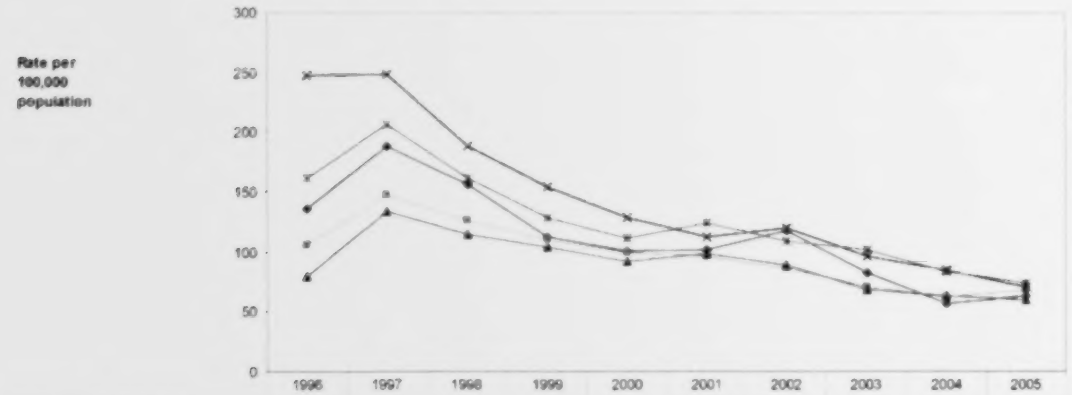
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BC Hepatitis C Reports	6130	7714	6255	4998	4393	4365	4529	3653	3103	2880
BC Hepatitis C Rate	158.2	195.4	157.0	124.6	108.8	107.0	110.0	88.0	73.9	67.9
Canadian Hepatitis C Rate	51.2	58.1	65.0	61.7	57.8	54.1	50.7	45.5	45.1	39.0

Note: Canadian rates are based on reporting provinces and territories.

Source: BC Centre for Disease Control, 2006.

Figure 12 illustrates that although absolute numbers of newly reported HCV infections vary from one health region to another, the rates of HCV infection by population are currently comparable across all health authorities, falling consistently between 60 to 75 cases per 100,000 people each year.

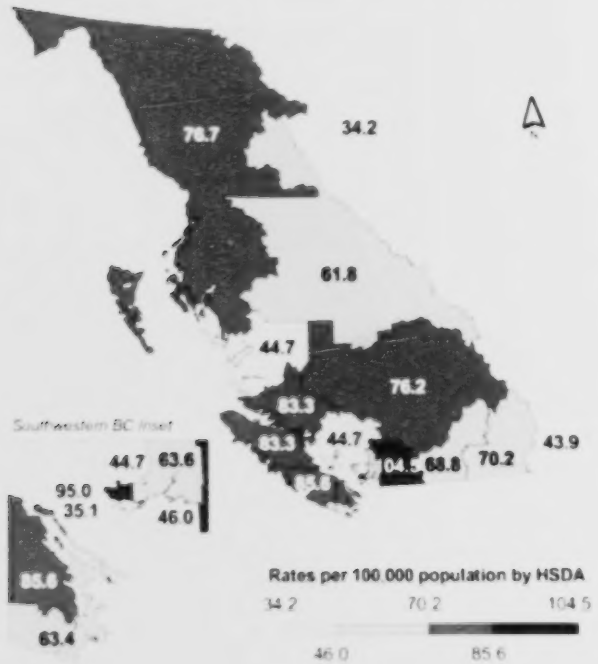
Figure 12: Rates of newly reported HCV infections by health authority, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Fraser Health Authority	136.3	188.3	156.3	112.2	101	101.8	118.1	83	56.7	62.9
Interior Health Authority	105.6	148.1	126.9	110.7	99.9	96.2	86.5	70.6	62.4	68.1
Northern Health Authority	78.8	134	115.1	104.1	92.4	98.9	88.4	69.1	62.8	59.5
Vancouver Coastal Health	247.3	248.4	188.7	153.9	128.4	112.1	120.2	96.3	84.6	71
Vancouver Island Health Authority	181.9	207.3	161.3	129	111.4	124	108.9	102.2	83.3	74.2

Source: BC Centre for Disease Control, unpublished data, 2006.

Figure 13: Hepatitis C rates by HSDA, 2005



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	36	43.9
12	Kootenay Boundary	56	70.2
13	Okanagan	225	68.8
14	Thompson Cariboo Shuswap	169	76.2
21	Fraser East	277	104.5
22	Fraser North	357	63.6
23	Fraser South	292	46.0
31	Richmond	61	35.1
32	Vancouver	568	95.0
33	North Shore/Coast Garibaldi	122	44.7
41	South Vancouver Island	221	63.4
42	Central Vancouver Island	214	85.6
43	North Vancouver Island	98	83.3
51	Northwest	65	76.7
52	Northern Interior	96	61.8
53	Northeast	23	34.2

Note: Map classification by Jenks natural breaks method.

Source: BC Centre for Disease Control, 2006.

Chronic hepatitis C infection is a significant health concern affecting approximately 250,000 Canadians, 60,000 of whom are British Columbians. An estimated 10 per cent to 20 per cent of those living with chronic HCV infections will develop cirrhosis, end-stage liver disease, hepatocellular carcinoma (liver cancer), or will require liver transplantation in the coming decades (Dinner, Donaldson, Potts, Sirna, & Wong, 2005). In addition, because only two-thirds of HCV infected individuals have been identified (Remis, 2003), there remains a large group of people living with chronic HCV who will likely not be diagnosed until they experience some of the complications of late-stage disease.

Canada currently spends about $500 million per year on management of HCV. British Columbia's share of this is likely $100 million, since the province is home to approximately one-fifth of the country's estimated prevalent infections (Remis, 2003). These expenditures are expected to double by the year 2010 as the population living with chronic HCV infection ages and begins to develop related liver damage and complications (Leigh, Bowlus, Leistikow, & Schenker, 2001). Identification of acute infections may have important implications because early treatment may prevent chronic infection in the majority of cases (De Rosa et al., 2006). Current therapies in the form of pegylated interferon plus ribavirin, produce sustained virological responses (viral clearance) in 42 per cent to 44 per cent of treated individuals infected with viral genotype 1, and in 78 per cent to 82 per cent of those treated that are infected with either genotype 2 or 3 (Morris et al., 2004). However, only 30 per cent to 50 per cent of infected individuals are eligible for therapy under current guidelines, and many will discontinue treatment due to significant and debilitating side effects (Falck-Ytter, Kale, Mullen, Sarbah, Sorescu, & McCullough, 2002; Zeuzem et al., 2004). Treatment is costly and complex to administer, limiting its availability.

There is no vaccine to prevent HCV infection. Transmission can be prevented through targeted public health measures, but the populations predominantly affected by HCV can be difficult to reach and support. Many of these populations also experience increased vulnerability to other diseases and conditions: for example, an estimated 5-10 per cent of HCV infected individuals are co-infected with HIV. Largely ignored by the health system because of circumstances that can contribute to marginalization, these populations are a source of ongoing HCV transmission. Reducing the burden of HCV in these populations will require improved approaches to prevention and care services informed by, and developed with, communities most affected. To achieve this, a coordinated approach involving public health initiatives, primary care and specialist services is required.

Appendix B: Provincial Hepatitis Strategy 1999

A Hepatitis Strategy for British Columbia was prepared by the Vancouver Richmond Health Board, and released in July 1999. Canada's first integrated viral hepatitis strategy, it outlined a coherent, province-wide approach that balanced individual and population-based care. It also proposed to support and streamline a continuum of care for chronic viral hepatitis, linking and building on the strengths of existing public health and partner organizations.

The 1999 strategy included three goals:

- Reduce the transmission of hepatitis.
- Develop and implement provincial guideline-driven care and prevention programs through an interdisciplinary care management model that is inclusive of providers in the province and which ensures that both adults' and children's needs are met through the application of best practice standards.
- Develop a consortium of partners interested in basic, translational, epidemiological and clinical research.

Specific initiatives under the 1999 strategy included the establishment of BC Hepatitis Services as a division of the British Columbia Centre for Disease Control, in order to support evidence-based and performance-based approaches to the prevention and care of viral hepatitis infections. Since 1999, BC Hepatitis Services has undertaken:

- Development of a surveillance program to identify risk factors in persons newly diagnosed.
- Development of a pilot clinical care database.
- Establishment of pilot projects in partnership with each of the province's five regional health authorities to improve local access to services.
- Support for training of nurses and physicians in diagnosis and treatment.

BC Hepatitis Services has also undertaken consumer-focused research examining hepatitis C self-care management issues, personal advocacy and issues such as stigma associated with hepatitis C.

The concept of integrating the needs of populations (prevention) and individuals (care) recognizes the paradox of trying to address the needs of affected individuals while being fiscally equitable and serving the needs of the population. To address this, the demonstration sites or projects were implemented in five communities: Prince George, Campbell River, Vancouver, Surrey and Kamloops. The demonstration sites had the following objectives:

- To integrate prevention and care services.
- To connect providers and consumers to educational materials, resources, information and care options.
- To identify information required to assist decision-making and evaluate outcomes.

- To develop prevention and care best practices.
- To build prevention and care capacity.

BC Hepatitis Services supports these regional health authority efforts by providing both project coordination and infrastructure support for education, research, knowledge translation and evaluation. The project sites are managed and staffed mainly by public health nurses. The services include hepatitis-focused prevention, community development, education and clinical services. The clinical services provided by public health nurses include comprehensive health assessments, prevention and self-care education, chronic illness counseling for individuals and families and monitoring and support of those on treatment. Addictions, mental health and nutrition services are incorporated into the programs at most sites, in partnership with physician specialists. The sites organize medical clinics several times a month for patients who require specialized physician assessment and decisions regarding follow-up and/or treatment.

These demonstration site projects have proven to be particularly rich sources of new knowledge, on-the-ground experience with horizontal integration and best practice development. These projects each have multi-sectoral advisory committee which include consumers, and have been successful in fostering strong relationships among public health staff, treating physicians and community agencies.

Appendix C: The Case for Integration

Lessons learned through BC's hepatitis demonstration site projects suggest integrated approaches to hepatitis prevention care and treatment—approaches that are integrated both across the continuum of care and across disciplines and sectors—hold the key to a more successful overall response to viral hepatitis in British Columbia.

The benefits of adopting integrated approaches are also well established in the literature. This section explores the challenges, opportunities and benefits associated with vertical and horizontal integration in more depth.

Integrated approaches can promote greater efficiency, and improve communication and coordination among clients, providers, and government funding agencies. Integration can also improve sustainability of health services, increase cost-effectiveness, improve health status, increase user satisfaction, and improve equity of service delivery (Alberta Health and Wellness, 2000; Hoffman, Castro-Donlan, Johnson, & Church, 2004; Sciacca & Thompson, 1996). In its purest form integration refers to a single system of service planning and/or provision put in place and managed together by partners who nevertheless remain legally independent.

A single system for a particular service unites mission, culture, management, budgets, accommodation, administration and records, and applies at any organizational level (team, service or organization) (Integrated Care Network, 2004).

The term integration can mean different things to different people (Integrated Care Network, 2004; Lloyd & Wait, 2006; Grone & Garcia-Barbero, 2002; Leatt, 2002) , in large part because integration is both a process and a state along a continuum, where at one end autonomous organizations work within their own boundaries with little if any integration, and at the other end autonomy of individual organizations is subsumed by full integration (MSM epidemics, 2002 as cited in Jourden & Etkind, 2004; Integrated Care Network, 2004). Moving along this continuum may present opportunities for improvement.

The BC Viral Hepatitis Strategic Framework proposes a broad definition of integration that includes partnerships, shared care, integrated or interdisciplinary delivery teams, cross-sectoral partnerships, community and client engagement, community development and involvement, consumer involvement, relationship building and coordinated, collaborative processes.

This plethora of terms related to integration has been described in the literature (Percy-Smith, 2005, as cited in Brown & White, 2006; Sloper, 2004, as cited in Brown & White, 2006). Bringing clarity to the use of language helps all partners in the integration process can share an understanding of key concepts.

There are many promising examples found in the literature that support taking integrated approaches within the health system; some of the challenges presented in moving towards increased integration are also well described in the literature. This apparent dichotomy should not discourage integration efforts in BC, but should inform BC's approach by ensuring that past successes and failures are accounted for in the planning, implementation and evaluation processes of integration efforts.

Partnerships are not new concepts, as many organizations have been working in partnerships for many years. For partnerships to be successful, the role each partner takes in planning, designing and delivering services must be clearly articulated and understood by all. Successful partnerships share short- and long-term goals and objectives, ensure sufficient time and commitment is dedicated to the partnership building process and have clear and supportive leadership in an atmosphere where cultural barriers can be explored (Lloyd & Wait, 2006).

Partnerships and integration efforts also evolve over time and are impacted by changes in the health system, policy and funding mechanisms. By taking a deliberate approach to health system design, and creating incentive structures and population-based performance measures, policy-makers can support integrated community-based care through health partnerships (Plochg, Delnoij, Hoogedoorn, & Niek, 2006).

Chronic disease management (CDM) is an approach to care that emphasizes helping individuals maintain independence and stay as healthy as possible through prevention, early detection, and management of chronic conditions, such as congestive heart failure, asthma, diabetes, and other debilitating illnesses.

Chronic conditions impose challenges for those affected, their families and care providers. A patient's ability to follow medical advice, accommodate lifestyle changes, and access resources are all factors that influence successful management of an ongoing illness.

In BC, chronic disease management involves many health professionals and administrators within all sectors of the health system sharing a common vision and collaborating on multiple initiatives[9]. They support health service delivery to patients living with long-term and life-threatening illnesses, and assist them with developing self-management strategies.

According to the Integrated Care Network in the United Kingdom, "the fragmentation of services between and within organizations, and between different professions is a key obstacle to effective care. A simpler, more user-friendly system is needed, with a single point of access wherever possible and greater continuity: integration is seen as the means to this end" (Integrated Care Network, 2004).

Integration is most needed and works best when it focuses on a specifiable group of people with complex needs, and where the system is clear and readily understood by service users and preferably designed with them as full partners. The converse of this is also important, meaning the vast majority of people with non-complex needs may continue to be well-served by their physician, acting more or less independently of other services. The degree of complexity of individual needs should determine the requirement and context for integration (Integrated Care Network, 2004).

The Integrated Care Network (2004) describes five areas where integrated approaches should begin to demonstrate improvements for consumers.

- Access to care.
- Reshaping of care services.
- Greater engagement with local communities and those experiencing social exclusion.
- Reshaping of financial and other resource flows.
- Developing and redesigning workforce patterns.

Integration can be initiated and developed at any organizational level (strategic, operational or practice) and on any scale.

According to the Scottish Executive (2002), integrated care for drug users is an approach that seeks to combine and coordinate all of the services required to meet the assessed needs of the individual. It requires the following:

- Treatment, care and support to be person-centered, inclusive and holistic to address the wide ranging needs of drug users.
- Service response is to be needs-led and not limited by organizational or administrative practices.
- Collaborative working between agencies and service providers at each stage in the progress of the individual in treatment, care and support, through to rehabilitation and reintegration into the community.

Evidence shows that patients with chronic viral infections such as hepatitis C often have multiple co-existing problems such as psychiatric and addictive disorders. Other difficulties include problems with housing, family relationships, employment, involvement with the criminal justice system, and debt, any one of which can present challenging obstacles to successful care (Gossop, 1998, as cited in Scottish Executive, 2002). Because services for these issues are usually provided by different disciplines in varying locations, fragmentation of care can lead to treatment dropout, lack of adherence and poor outcomes.

Additionally, the literature indicates that multiple co-existing problems can be associated with intensive use of higher cost crisis-oriented services, such as psychiatric hospitalization, emergency medical care and the criminal justice system, and less engagement in more traditional and less costly treatment services, such as case management (Drake, Bartels, Teague, Noordsy, & Clark, 1993, as cited in Mangrum, Spence, & Lopez, 2006). Integration strategies, ranging from simple efforts to improve communication and coordinate care to fully integrated multidisciplinary teams have been used to improve disease management (Bernard & Joshi, 1999).

Health policy researchers in Scotland (Scottish Executive, 2002) found there is emerging evidence about the individual and population level benefits that flow from integrated care and service models. An integrated care approach founded on cooperation and collaboration between all relevant providers was shown to result in the following:

- Earlier assessment and intervention for service users.
- Improved removal of barriers to stabilization/rehabilitation.
- Improved consistency and better coordination, leading to more comprehensive and holistic care.
- Quicker responses to changing circumstances.

Policymakers are also drawn to integrated care, if for different reasons. Five drivers behind a policy agenda focusing on integrated care agenda include (Wait, 2005):

- Addressing the changing demand for care.
- Recognizing that health and social care outcomes are interdependent.

- Improving social integration of society's more vulnerable groups.
- Improving system efficiency and effectiveness.
- Enhancing quality and continuity of care.

International research supports integration efforts among vulnerable populations and demonstrates improved access and improved health outcomes. Furthermore, the integration of mental health and addictions services can result in significantly greater improvement in patients' general functioning than routine care alone (Friedmann, Zhang, Hendrickson, Stein, & Gerstein, 2003; Mangrum et al., 2006).

In New Zealand and the United States, establishing integrated community health centres resulted in improved access to services and health status over pre-existing arrangements, lower hospitalization rates, lower communicable disease rates and improved health-related behaviours among those who participated (Crampton, Dowell, & Woodward, 2001, December).

Experience from the United States suggests that alternative sentencing drug rehabilitation programs provide a venue to efficiently deliver integrated hepatitis and other prevention services. Considering the proportion of high-risk persons in drug rehabilitation, probation, parole and inmate release programs, an opportunity exists to greatly expand hepatitis services in this arena (Gunn, Lee, Callahan, Gonzales, Murray, & Margolis, 2005).

Drug users who congregate in public areas or open drug scenes are often homeless and marginalized, and lack access to social and health care services. European studies indicate that severe health risks are linked to street-based injecting (Hedrech, 2004). North American reviews suggest the integrated nature of supervised consumption facilities may target several public health problems largely unaddressed by needle exchange, street-outreach, education campaigns, HIV counseling and other conventional services; compared to conventional services, supervised consumption sites "provide greater opportunities for health workers to connect with injectors, and to move them into primary care, drug treatment, and other rehabilitation services" (Broadhead, Kerr, Grund, & Altice, 2002, pp. 347-348).

In 2003, Vancouver Coastal Health, in partnership with the PHS Community Services Society, opened North America's first legal supervised injection site, known as Insite, as a scientific research pilot project in Vancouver's downtown east side neighbourhood. Independent evaluators have established, with support from Health Canada, a cohort study of persons who use Insite—the Scientific Evaluation of Supervised Injecting cohort (Wood et al., 2004a). Information gleaned from this cohort suggest that not only do those who use the facility benefit from its services, but that benefits also accrue to the wider community in the form of improved public order and reductions in public injection (Wood et al., 2004b). Prevention services, such as drug consumption rooms, have been found to be effective in promoting integrated care for long-term drug users, as they improve access to other services including immunization, referral to treatment programs and mental health; supervised consumption sites promote the inclusion of a group that is not well engaged by the formal health system. Low-threshold medical care and psychosocial counseling services are especially well-suited to integration with supervised consumption services, and can contribute to the stabilization and improvement of the somatic and psychological health of service users. For frequent users in particular, the consumptions sites act as a link to the wider system of care, facilitating access to treatment (Hedrech, 2004).

Young people who use drugs and are at risk of developing problematic substance use tend to have multiple antecedents and co-occurring mental health, social and educational problems (Burkhart, 2004). Guidance to practitioners emphasizes that drug issues must be addressed as part of a wider range of issues. Effective prevention strategies do not focus on drug issues alone, but instead utilize a holistic approach to engaging these populations. This approach calls for the integration of drug prevention work with mainstream services rather than stand-alone interventions (University of Victoria, 2006).

Clearly, there are individual and population-level benefits associated with many sorts of integration: integration across disciplines; integration across the health system including public health, mental health and addictions, home and community care, primary care and beyond; integration at the community level, especially involving vulnerable communities not well engaged in current health system efforts; and integration across the continuum from prevention through care and treatment. The challenges are real, but working to build and enhance integrated approaches is a key aspect of building healthy pathways to a hepatitis-free British Columbia.

Appendix D: Developing the Strategic Framework

The Ministry of Health, in collaboration with health authorities, BCCDC and service provider representatives, has developed this document to complement, guide and support public health and health authorities and other partner organizations to deliver viral hepatitis services in British Columbia. *Healthy Pathways Forward: A Strategic Framework for Viral Hepatitis in British Columbia* is intended to also serve as a roadmap for better engagement of vulnerable populations.

A variety of activities were undertaken to support the development of this framework. A literature review of international, national and provincial/state strategies was conducted. Key documents were reviewed including strategies from Alberta, the United States National Hepatitis Strategy, the Viral Hepatitis Strategic Plan for the New York State Department of Health, the Hepatitis C Strategy for England, the Australian National Hepatitis C Strategy, as well as the strategy for the Australian State of Victoria.

In addition, Canada's Strategy for Hepatitis C and *The Health and Well-being of Aboriginal People in British Columbia: Provincial Health Officer's Annual Report 2001* (Provincial Health Officer, 2002) were reviewed. An initial draft framework was developed through a series of planning workshops held in collaboration with the Viral Hepatitis Strategic Planning Steering Committee—a committee comprising infectious disease specialists, public health nurses, medical health officers and representatives of health authorities, a family physician, a representative from a consumer organization, BCCDC staff and ministry representatives.

During early 2006, consultations to seek input and advice on this draft framework were held with health authority staff, community members and community services organizations in communities across BC and by web conference. Health authority representatives on the steering committee were encouraged to invite a broad cross-section of health authority staff and managers to the sessions as well as consumers and community organizations.

Community consultation sessions were held in Smithers, Prince George, Vancouver, Kelowna, Vernon, Surrey, Victoria, Nanaimo and Fort St. John. Sessions were also held with representatives from external organizations including the Aboriginal community, Citizenship and Immigration Canada, family physicians, the BC Corrections Branch the Vancouver Area Network of Drug Users (VANDU) and youth with HIV and/or Hepatitis C at YouthCO AIDS Society. In total more than 130 individuals participated in the consultation (listed in Appendix E).

The project team received an immense amount of feedback, ideas and suggestions. Feedback from the sessions was recorded, and sorted into strategic advice and implementation considerations. The strategic advice was then synthesized into common themes and incorporated into the revised document. The following themes relating to developing and finalizing the framework emerged from the consultation process:

- Promote understanding of the breadth of vulnerability as more than just risk behaviour, and address negative public attitudes that impede access to health care for those vulnerable to, or living with, viral hepatitis.
- Consider and respond to the ongoing needs of those living with chronic viral hepatitis including improving access to treatment.

- Approach viral hepatitis in ways consistent with other communicable diseases.
- Apply harm reduction as both a principle and way of engaging specific populations.
- Use a social marketing approach to prevention and start prevention efforts early—with children, youth and young families.
- Acknowledge unique conditions and considerations in addressing hepatitis in Aboriginal populations.
- Improve screening and early detection.

In addition, the consultative process generated the following themes associated with implementing the framework:

- Find practical ways to address working within existing resources.
- Develop public health policy and practice tools for hepatitis C similar to those that exist for hepatitis A and B.
- Align treatment standards with national recommendations.
- Develop tools to facilitate knowledge exchange and transfer.
- Gather data on cause of death, percentage of people treated, percentage of people achieving sustained viral response, availability of post-testing diagnosis and counseling and referral.
- Focus prevention efforts to an earlier age—children, youth and young families.
- Identify early onset of mental illness in youth.
- Eliminate public misconceptions about viral hepatitis and increase public awareness.
- Enhance emphasis on managing chronic late-stage disease.
- Improve connections between existing demonstration sites and the broader service delivery system.
- Immunization update follow-up may be needed for people who thought they were immunized for life against hepatitis B.
- Consider approaches used with HIV in addressing stigma.
- Work with correction services to improve release planning and follow-up as inmates are released back into communities.
- Improve the linkages between health authorities and Citizenship and Immigration Canada and local immigrant services.
- Improve sharing of immunization status information between BCCDC and correctional facilities.
- Consider how best to address physician needs as part of the strategic framework and involve physicians in the ongoing implementation of framework activities.

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Interior Health Authority
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Vancouver Coastal Health
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Dr. James Lu, Medical Health Officer, Richmond HSDA

Vancouver Island Health Authority
Audrey Shaw, Coordinator Epidemiology & Disease Control, VIHA South

Appendix E: List of Consultation Forum Participants

The project team wishes to extend its sincere appreciation to all those who participated in the consultations, sharing their commitment, energy and enthusiasm. We apologize for any errors or omissions in the participants listed below.

Fraser Health Authority – Community Session - Surrey

Amrit Rai
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Ardith Watson
James Bennett
Marlene Dutton
Stephanie Grant
Cathy Wall
Kim Andreassen
Sam Freidman
Susan Mundt

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Cathy Wall
Diane Dagenais-Preston
Gisele Sundmark
Jennifer Ellis
Linda Hebel
Penny Robertson
Terri Amos
Andrew Larder
Christine Halpert
Diane Miller
Heather Winnichuk
Judi Mussedden
Lucinda Schwab
Sharyn Sutherland
Barbara Metcalf
Courtenay Proud
Ellen D'auria
Jan Olson
Larry Gustafson
Mary Ann MacDonald
Stephanie Taylor

Northern Health Authority – Health Authority Staff – Prince George

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Mary Lea Penrose
JoAnne Alexander
Kathy Wrath
Patricia Strim
David Bowering
Mary Margaret Proudfoot

Northern Health Authority – Community/Health Authority Staff – Prince George

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Mary Lea Penrose
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Charl Badenhorst
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Sharon Hoeppner
Connie Cunningham
Kate Duckett
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Lee Cameron
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Deb Schmitz
Judy Morris
Lynlee Joiner
Carlin Miroslaw
Doreen Stalker
Kathy Davidson
Nancy Dhaliwal

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Brenda Ramshaw
Chris Crabtree
Diana White
Fran Falconer
Kathleen Cherniawski
Michelle Crosby
Sandra Waarne
Anita Dotts
Carla Springinotic
Claire Coombs
Donna Craigon
Jan Adams
Mark Gilbert
Myrna Klein
Sylvia Dolbec
Audrey Shaw
Chloe Brozuk
Darcy Ross
Donna McNeil
Janice Danong
Michael Gotto
Pat Partridge

Vancouver Island Health Authority – Community Session - Nanaimo

Serge Ballincourt
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Elaine Clarke
Dell Grimstad
Claire Coombs
Donna McNeil

(note: attendance list incomplete)

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Jackie Hlagi

Interior Health Authority – Community Session - Vernon

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Brian Mairs
Christine Sorensen
Digby Horne
Gordon McClure
Ken Thompson
Marilyn Tolmie
Sharon Cullen
Barry James
Cherri Fitzsimmons
Daniel Tolimi
Gail Orr
Jacqueline Arnold
Lisa Mortel
Marjorie Harris
Tammy Caza
Betty Carswell
Cheryl Dowden
Darryl Roberts
Gayle Carriere
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Linda McCannell
Shelagh Weatherill
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Patty Daly
Reka Gustafson
James Lu
Dana Sherman

Aboriginal Focus Group - Vancouver

Carole Patrick
Lucy Barney
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Deborah Senger
Marie Van Humbeck
Sandra Greene
Ken Clement
Michelle de Groot

BC Corrections - Victoria

Diane Rothon
Joye Morris

Citizenship and Immigration Canada - Vancouver

Nadine Gomm
Carillon Kinley

Physician Focus Group

Andrew Murray
Pina Michieletti
Eric Yoshida
Rob Baker
Fiona Duncan
Rolando Barrios

Focus group sessions were also held with the Vancouver Area Network of Drug Users (VANDU), and YouthCO AIDS Society. Participants at these sessions are not listed here by name in order to protect their privacy.

EndNotes

[1] See Appendix E for a list of Steering Committee members.

[2] See Appendix B for a description of the 1999 Hepatitis Strategy for British Columbia, BC Hepatitis Services and the demonstration sites developed in partnership with BC's five regional health authorities.

[3] See Chronic Disease Management: BC's Expanded Chronic Care Model at www.healthservices.gov.bc.ca/cdm/cdminbc/chronic_care_model.html.

[4] See Glossary.

[5] For more information on the provincial approach to harm reduction see *Every Door is the Right Door: a British Columbia Planning Framework to Address Problematic Substance Use and Addiction*, by the Ministry of Health Services, 2004, May.

[6] Youth at risk has been defined as "alienated and marginalized youth who are characterized by: adopting the street lifestyle, dropping out of school or failing academically, being involved in alcohol and/or other drug use, and being involved in illegal behaviour." (Health Canada, 2004). However, our consultations with youth suggest that this definition is too narrow.

[7] Hard-to-reach populations may include intravenous drug users, immigrants and refugees, vulnerable youth, correctional inmates, men who have sex with men and Aboriginal peoples, as well as persons living with viral hepatitis who because of stigma are unwilling to come forward.

[8] Annual communicable disease reports and other information of interest to the public health community can be viewed at www.bccdc.org.

[9] See British Columbia's Expanded Chronic Care Model at www.healthservices.gov.bc.ca/cdm/cdminbc/chronic_care_model.html

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